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REVISIONAL NOTES ON THE GENUS *COLOTIS* HÜBN. (LEPID. PIERIDAE). WITH A SYSTEMATIC LIST

By G. Talbot.

(Read 19th, October, 1938.)

Soon after commencing to arrange the collection of *Colotis* at the British Museum, I found that the classification as adopted by Aurivillius (1910, *in* Seitz, *Macrolep. World* **13**) and by myself (1934–1935, *Lepidopt. Cat.* **60, 66**) would require serious revision. The wealth of added material at the British Museum enables one to form a clearer idea of the character of the species in this extremely variable genus. These species are now reduced from 66 in the *Lepidopt. Cat.* to 42, or, including the genus *Gideona*, to 43.

The genitalia of this group do not afford much help; time did not permit of any detailed investigation, which would entail very careful and minute study. Whoever undertakes this should examine the structures by the wet method unmounted; otherwise any differences that may exist will not be detected.

The systematic list shows the arrangement at present adopted at the British Museum. All synonyms are included, and the date of publication of each name given. The full bibliographical reference will be found in the 1934–1935, *Lepidopt. Cat.* **60, 66**; any omitted from this are given in the systematic list.

Unfortunately it was found necessary to propose 42 new names, chiefly to indicate distinctive female forms. A list of these names, with their type localities, is appended.

Only one species is unrepresented in the British Museum. This is *ungemachi* Le Cerf, a very peculiar and rare species from Eritrea.

Although the collection of *Colotis* at the British Museum is very large, there still remains a need for considerable additions to some species from certain areas, particularly from parts of Tanganyika Territory, Kenya, Uganda, the eastern Congo, Nyasaland and Rhodesia.

This paper is based on work carried out on material in the British Museum and I am grateful to the Trustees and authorities of the Museum for the facilities granted me there.

Key to species groups.

♂♂.

1. Fore-wing upperside with small antemarginal or submarginal spots or dots of ground-colour between the veins . . . . . 2.
   Fore-wing upperside without antemarginal or submarginal spots or dots of ground-colour between the veins . . . . . 5.
2. Fore-wing upperside with the veins as the ground-colour; apical area with violet-red spots . . . . . *celimene* group, p. 179.
   Fore-wing upperside in the apical area without distinctive colouring, or if with purple markings the veins black . . . . . 3.
3. Fore-wing upperside with the veins black; one species with purple markings. Hind-wing with yellow costal or anterior area, except in one species in which the wing is entirely white . . . *halimede* group, p. 180.
   Hind-wing upperside without distinctive yellow anterior or costal area . 4.

4. Fore-wing upperside in ♂ with an oval patch of raised scales near base of area 1b . . . . . *fausta* group, p. 214.
   Fore-wing upperside in ♂ without a sex-patch . . *calais* group, p. 175.
5. Fore-wing upperside with apical area black or brownish . . . . . 15.
   Fore-wing upperside with apical area either violet-blue, red, orange, yellow or ochraceous . . . . . 6.
6. Fore-wing upperside with apical area reaching below vein 3 . . . . 7.
   Fore-wing upperside with apical area not reaching below vein 3 . . 9.
7. Fore-wing upperside with apical area orange. Hind-wing underside with small marginal black vein-dots . . . . . *evanthides* group, p. 206.
   Fore-wing upperside with apical area yellow or orange. Hind-wing underside without marginal vein-dots . . . . . 8.
8. Fore-wing upperside with apical area orange. Both wings on both sides without a discocellular dot . . . . . *liagore* group, p. 206.
   Fore-wing upperside with apical area yellow or orange. One or both wings with a discocellular dot . . . . . *eucharis* group, p. 191.
9. Fore-wing upperside with apical area marked with purplish-blue or dark crimson . . . . . *ione* group, p. 183.
   Fore-wing upperside with apical area marked red or yellow . . . . . 10.
10. Fore-wing upperside with apical area edged with black proximally, but sometimes this edging faint or absent in dry-season forms . . . . . 11.
    Fore-wing upperside with apical area never proximally edged with black *antigone* group, p. 207.
11. Hind-wing underside with the veins red . . . . *eulimene* group, p. 215.
    Hind-wing underside with the veins not red . . . . . 12.
12. Hind-wing underside with a dark oval or semi-oval discocellular spot, centred with red or white . . . . . *danae* group, p. 188.
    Hind-wing underside with a dark discocellular dot which may be edged with orange or yellow . . . . . 13.
13. Fore-wing upperside with apical area ochraceous . . . *agoye* group, p. 205.
    Fore-wing upperside with apical area red, orange-red or orange . . . 14.
14. Fore-wing upperside with inner edge of the red or orange apical area fairly straight, sometimes irregular but not distinctly curved *antevippe* group, p. 192.
    Fore-wing upperside with inner edge of the red or orange apical area more or less distinctly curved and irregular, this more marked in specimens with heavier black edging . . . . . *evippe* group, p. 196.
15. Upperside with yellow ground-colour . . . . . 16.
    Upperside with white ground-colour . . . . . *eris* group, p. 212.
16. Hind-wing underside freckled with brown . . . *subfasciatus* group, p. 213.
    Hind-wing underside not freckled with brown (Madagascar species) *mananhari* group, p. 211.

♀♀.

1. General pattern as in the ♂ . . *calais* (p. 175), *agoye* (p. 205), *liagore* (p. 206), *antigone* (part) (p. 207), and *eulimene* (p. 215) groups. Also the ♀ of *C. ephyia* (Klug).
   General pattern not as in the ♂ . . . . . 2.
2. Fore-wing underside with a post-discal row of black or brownish spots, or at least the two in areas 2 and 3 prominent. (These spots usually obsolete or absent in *elgonensis* Shpe., in *ione* group) . . . . . 3.
   Fore-wing underside without a post-discal row of spots . . . . . 8.
3. Fore-wing upperside with antemarginal dots or spots between the veins . 4.
   Fore-wing upperside without antemarginal dots or spots between the veins 5.
4. Fore-wing upperside with the dark apical area bearing spots of ground-colour . . . . . *fausta* group, p. 214.

Fore-wing upperside without a dark border bearing spots of ground-colour, but a post-discal series usually prominent . . . *halimede* group, p. 180.

5. Hind-wing upperside with a post-discal curved row of small black spots, the spot in area 4 placed more distad than the others *danae* group, p. 188.
Hind-wing upperside without a complete post-discal row of spots, these spots absent or only some are present . . . . . 6.
6. Fore-wing upperside usually with purple, red, or orange apical spots; never with a stripe along inner margin . . . . . 7.
Fore-wing upperside never with purple or red apical spots; usually a black stripe along inner margin . . . . . *eris* group, p. 212.
7. Hind-wing upperside without post-discal black spots, a post-discal streak sometimes present . . . . . *ione* group, p. 183.
Hind-wing upperside with some irregular post-discal spots, but no spot in area 4. Fore-wing usually with orange apical colouring *eucharis* group, p. 191.
8. Fore-wing upperside with outer black border bearing antemarginal white dots between the veins . . . . . *celimene* group, p. 179.
Fore-wing upperside without antemarginal dots between the veins . . 9.
9. Fore-wing upperside with apical part orange, and limited posteriorly in area 2 by black edging . . . . . *evanthides* group, p. 206.
Fore-wing upperside with large orange area, not limited by black edging in area 2 . . . . . 10.
10. Hind-wing underside freckled with brown . . *subfasciatus* group, p. 213.
Hind-wing underside not freckled with brown . . . . . 11.
11. Fore-wing upperside with a red or orange band in the black apical area . 12.
Fore-wing upperside with immaculate outer black border, reaching tornus *mananhari* group, p. 211.
12. Fore-wing upperside with black apical area bearing a red or orange band or row of similarly coloured or white spots, at least a trace of orange or of whitish markings in the apical area . . . . *evippe* group, p. 196.
Fore-wing upperside with an orange apical area divided by a transverse black band or row of spots . . . . . 13.
13. Fore-wing upperside with a black stripe along inner margin, or a basal patch, both entering the cell . . . . . *antevippe* group, p. 192.
Fore-wing upperside with a black stripe along inner margin, not entering the cell . . . . . *antigone* group (part), p. 207.

calais group.

Species of average size (35 mm.–50 mm.), excepting the larger *protomedia* (Klug). Fore-wing upperside with small submarginal spots of ground-colour between the veins; usually a transverse row of black post-discal spots, and these more or less united with the black marginal band; or there is a broad black marginal border bearing spots of the ground-colour, of varying size, which appear to cut off a post-discal series of black spots. The sexes resemble each other.

Key to species (♂♀).

1. Hind-wing underside without transverse lines or at least no sub-basal one . 2.
Hind-wing underside with transverse lines or bands . . . . . 4.
2. Fore-wing upperside with prominent black subtornal spot in area 1b *calais* (Cram.).
Fore-wing upperside without a spot in 1b . . . . . 3.
3. Fore-wing upperside with ground-colour white . . . . *vestalis* (Butl.).
Fore-wing upperside with ground-colour salmon-pink . . . *phisadia* (Godt.).
4. Hind-wing upperside with a black costal border reaching the base *ungemachi* (Le Cerf).

Hind-wing upperside without a black costal border . . . . . 5.
5. Upperside of both wings pale ochreous . . . . . *doubledayi* (Hopff.).
Upperside of both wings ochreous-brown . . . . . 6.
Upperside of both wings with spots in distal area pale ochreous, proximal area white . . . . . *vesta* (Reiche).
Upperside of both wings sulphur-yellow . . . . . *protomedia* (Klug).
6. Fore-wing upperside with prominent bluish-grey basal area . . . . . 7.
Fore-wing upperside without a bluish-grey basal area . . *ansorgei* (Marsh.).
7. Hind-wing underside with post-discal band very irregular, and the distal ends of the four posterior spots sharply pointed; usually the spot in area 3 reaches the base of this area . . . . . *aurigineus* (Butl.).
Hind-wing underside with post-discal band irregular, the spots shorter and less pointed than in *aurigineus*; usually the spot in area 3 not reaching the base of this area . . . . . *chrysonome* (Klug).

Notes.

C. calais calais (Cram.).

The type locality is given by Cramer as Cape of Good Hope. The form *dynamene* (Klug) belongs to the dry season. The original figure shows the form found in Aden.

Fore-wing upperside with the outer edge of the ochraceous area from vein 2 to vein 4 straight or with very slight tooth on vein 3; the ochraceous tornal spot never obviously separated from the area at vein 2. Hind-wing with extended ochraceous area and a series of small black post-discal spots. In the nominotypical wet-season form as figured by Cramer, the post-discal spots of the hind-wing are merged with the black outer border and there remains a series of small ochraceous post-discal spots.

C. phisadia phisadia (Godt.).

This subspecies extends from Aden to Palestine, Mauritania, Sudan and Somaliland. In the *Lepidopt. Cat.* **60**: 335, the citations for India refer to *protractus* (Butl.). In Africa the species has 5 forms of female: (1) resembling the ♂, (2) with white instead of pink on the fore-wing, (3) yellow, (4) with ochraceous fore-wing, (5) with both wings ochraceous.

C. vestalis vestalis (Butl.).

There is a symmetrical gynandromorph in the British Museum from Karachi (ex Coll. Oberthür).

C. vestalis castalis (Stgr.) dry-season form **diminuta** form. n.

♂. Upperside with more restricted black markings, and the dark basal areas more dusted with white. Hind-wing with no complete outer black border, this reduced to a thin line or to a row of small marginal spots, and a few submarginal marks which usually do not enclose submarginal spots of the ground-colour. *Underside* of hind-wing and of apical area of fore-wing pale ochraceous.

♀. Resembles the ♂, the black markings only a little more extended. Fore-wing usually without a tornal spot of ground-colour. Most specimens are greenish-yellow or pale ochreous; others are white, but rarely without a greenish tinge. Underside as in ♂.

♂ holotype labelled: SOMALILAND; Buran, 3000 feet, Lat., 10° 13′ N., Long., 48° 47′ E., xii.1929 to i.1930 (*C. L. Collenette*). ♀ allotype labelled as above, but ix.–x.1929.

C. vestalis castalis (Stgr.) wet-season ♀ form **sabulosa** form. n.

Distinguished by the rich ochraceous colouring of the upperside. A single specimen in the British Museum from Taveta (ex Coll. H. J. Adams). This insect was figured by Lathy, 1906, *Trans. ent. Soc. Lond.* **1906 :** 8, pl. ii, fig. 6.

C. chrysonome (Klug).

The name *gaudens* (Butl.) must be applied to the race from Abyssinia of which there are 4 ♂♂, 3 ♀♀ of the dry-season form in the British Museum. The wet-season form (7 ♂♂, 2 ♀♀) is not apparently very different from the nominotypical race; but in 5♂♂ the hind-wing upperside has a light post-discal band on which there is no black scaling.

C. chrysonome chrysonome (Klug).

In the nominotypical wet-season form the hind-wing underside has the markings small and sharply defined on a yellow ground. The dry-season form is *helvolus* (Butl.), and an extreme dry form is *arenicolens* (Butl.). In the latter the black markings are absent on the underside of fore-wing, and reduced on the upperside; the spot in area 2 of the post-discal band of fore-wing upperside is obsolete in the ♂ and faintly marked in the ♀.

C. aurigineus (Butl.).

The nominotypical subspecies is represented in the British Museum, from the S. Sudan, Uganda, Kenya, Tanganyika Territory, Nyasaland and eastern Congo (Ruanda). There is a single ♂ from North Rhodesia (Fort Jameson) but the locality may be doubtful. The species does not seem to occur in Somaliland.

C. ansorgei (Marsh.).

A distinct species which occurs with *aurigineus* in Tanganyika Territory. Butler's reference (1897) to this species occurring in Somaliland is erroneous; no specimen was in the British Museum prior to 1918.

The name *cosmas* (Hulst.) appears to indicate a race of *ansorgei* from south-east Kenya (Tsavo River district).

C. ungemachi (Lé Cerf).

A very distinct and peculiar species from Eritrea. No specimen exists in the British Museum. According to its author, the species is best placed near *chrysonome*, *aurigineus*, and *vesta*, as indicated by the ♀.

C. vesta (Reiche).

A study of the distribution of the forms represented by *vesta* (Reiche) and *amelia* (Lucas), leaves little doubt that these are conspecific. The two northern races from west Africa and the Sudan have the spots on the outer black borders small or only partly present. This *amelia*-like form splits into two series of races from Uganda southwards, one series reaching farther south than the other. The distribution is given in the systematic list, and 10 subspecies are distinguished.

The nominotypical form is rare. It is only represented in the British Museum by 5 ♂♂, 1 ♀ from Abyssinia, and 1 ♂, 2 ♀♀ from Somaliland, all being specimens of the dry-season form.

C. vesta princeps subsp. n.

Uganda and south-east Sudan.

♂. Upperside of fore-wing with ochraceous post-discal area reaching end of cell. The post-discal spots on both wings, and the marginal spots on the hind-wing larger and more prominent than in *velleda*, resembling those of *vesta*. The discocellular spot larger than in the two preceding races. *Underside* with submarginal yellowish-white spots of fore-wing and the yellowish-white post-discal spots of hind-wing larger than in *velleda*.

♀. Resembles the ♂, except that the distal edge of the white proximal area of fore-wing is sometimes tinged with ochreous; post-discal spots of hind-wing usually white, but sometimes partly ochraceous.

♂ holotype labelled: UGANDA: Semliki Plains, near south shore of Lake Albert, 2200 feet, 25–27.xi.1911 (*S. A. Neave*). ♀ allotype labelled: Toro, i.1902 (*F. J. Jackson*).

A series of both sexes from Uganda (Semliki and Toro), 1 ♂ from Unyoro, 1 ♀ from Nandi, 4 ♂♂, 2 ♀♀ from south-east Sudan.

C. vesta catachrysops (Butl.).

The seasonal forms are not very different. The dry form appears to be rare, and has the underside of the hind-wing and apical area of fore-wing more reddish and clouded over with dull ochraceous.

The name *agapita* (Hulst.) is applied to a ♀ form in which the discal area of the fore-wing is deep orange-yellow.

C. vesta mutans (Butl.).

Ranges from south Nyasaland to Rhodesia, Ngamiland and south-west Africa.

The dry-season form is here described as:

C. vesta mutans dry-season form **arida** form. n.

♂♀. Upperside markings as in the wet-season form; ♀ fore-wing with submarginal spots and post-cellular area above vein 2 more or less yellow. Underside of hind-wing and of apical and outer marginal borders of fore-wing clouded over with pinkish-ochraceous, the extreme forms without the reddish-brown colour found in the more southern race.

♂ holotype labelled: N.E. RHODESIA: Lower Luangwa River, 4–13.ix.1910, 1600–1800 feet (*S. A. Neave*). ♀ allotype labelled: N. RHODESIA: Karungu River, 12.x.1917 (*T. A. Barns*). In the British Museum 14 ♂♂, 5 ♀♀ of the subspecies.

C. vesta argillaceus (Butl.).

Ranges from Portuguese East Africa to Natal and Zululand. This is a darker race than the preceding one.

The wet-season form is here described as:

C. vesta argillaceus wet-season form **pluvius** form. n.

♂. Differs from the wet form of *mutans* chiefly by the increase of black markings on the upperside, noticeably the posterior square spot on the fore-wing and the discal band of the hind-wing.

♀. Upperside with darker areas than in the ♂.

♂ holotype labelled : ZULULAND : Euipangeni, 1.iii.1913 (*Dr. L. G. Higgins*). ♀ allotype labelled : NATAL : Tugela, 2500 feet, 12.xi.1896 (*G. A. K. Marshall*).

The three following subspecies occur in the western part of the area of the preceding forms. They are distinguished by the hind-wing upperside having the grey proximal area only extended to the end of the cell, whereas in the preceding subspecies this area reaches the black discal line.

C. vesta hanningtoni (Butl.).

Uganda and north-west Kenya.

The darkest form. Upperside of fore-wing with the submarginal spot in area 2 indistinct and the spot in 3 small. Hind-wing with the post-discal band of spots narrow. The ♀ is usually white, but may be yellowish. Two ♀♀ from Mulema (Uganda), taken in May, have the fore-wing yellow in the proximal half, with basal area pale orange; the spots on the black distal area of both wings are reduced.

C. vesta rhodesinus (Butl.).

West Tanganyika Territory and north-west Rhodesia.

Upperside of fore-wing with the submarginal spot in area 2 distinct, and the one in 3 larger than in the Uganda race. Hind-wing with the post-discal band of spots wider than in the Uganda race.

C. vesta virescens (Hulst.).

Katanga.

The description seems to apply to the ♀, but the sex is not stated, and the essential distinction was not understood.

♂♀. Wings more rounded than in the two preceding races. Upperside of fore-wing with the submarginal spot in area 2 more distinct, and the spot in 3 larger than in the two preceding races; discocellular spot large. Hind-wing with the post-discal band of spots wider than in the preceding race. Basal area of wings in both sexes more darkened than in the two preceding races, especially in the ♀. The ♀ is greenish-yellow to buff on the fore-wing, and greenish-yellow to white on the hind-wing.

C. protomedia (Klug).

This species does not show any seasonal variation, and occurs in the driest areas. It seems most probable that the species is absent from Madagascar. No recent specimens from there were contained among the large series in the Oberthür Collection of other species found in the Island ; only 1 ♂ from the Mabille Collection without details. There is also in the British Museum 1 ♂ from the Brabant Coll. (via Coll. Joicey) labelled : " Fianarantsa, Madagascar, ex Coll. Fruhstorfer." The species becomes rarer in eastern Kenya and Tanganyika Territory.

celimene group.

Upperside of fore-wing with marginal dots of ground-colour between the veins. ♂ with large apical black area bearing dark reddish-purple stripes divided by a black transverse line. ♀ with the purple stripes much reduced or absent. Underside of hind-wing with markings similar to the species in *calais* group. The forms hitherto treated as species are here regarded as subspecies, and only one species is distinguished.

C. celimene angusi (Roths.).

Was described from a single dry-season ♂ from Zinder. The British Museum contains 5 ♂♂, 1 ♀ from west Darfur and these may belong to *angusi*.

The specimens from Darfur resemble *sudanicus* (Auriv.). Upperside with wider distal area, the black edge placed nearer the cell, and the tornal black wider. ♀ on underside with larger marginal spots on both wings and larger subapical spots on the fore-wing, the spot in area 3 well developed. The underside coloration is more of the dry type, but somewhat intermediate.

C. celimene praeclarus (Butl.).

Since this was described from Somaliland from a single pair no further record of its capture has appeared. The types represent an extreme dry-season form.

C. celimene celimene (Luc.).

A long series in the British Museum from Kenya; but from Eritrea, 1 ♀; Abyssinia, 5 ♂♂; Uganda, 1 ♂; Tanganyika Territory, 4 ♂♂, 7 ♀♀; Nyasaland, 3 ♂♂.

C. celimene amina (Hew.).

This is a slightly differentiated race. It differs from *c. celimene* in the narrower outer border on hind-wing upperside, in the thinner lines on hind-wing underside, and in the larger and more prominent red patch on fore-wing underside.

A series of 16 ♂♂, 4 ♀♀ in the British Museum from Rhodesia, Transvaal and Bechuanaland.

C. celimene pholoë (Wllgr.).

Rare. In the British Museum 8 ♂♂, 5 ♀♀, chiefly from Damaraland and Angola. There are 3 ♂♂, 1 ♀ from the Joicey Coll. labelled "Transvaal," but it is doubtful if they came from there, though the subspecies may possibly occur in the western Transvaal.

halimede group.

Upperside mostly white with some yellow markings. ♂. Fore-wing with veins black, and with very small white submarginal spots between the veins. Hind-wing with no black markings excepting the marginal dots. ♀. More marked than the ♂, and either white or yellow or a mixture of both. Fore-wing upperside with a post-discal row of black spots reaching at least to vein 4.

Key to species.

♂♂.

1. Fore-wing upperside for the greater part purple-violet . . *zoë* (Grand.).
   Fore-wing upperside yellow or white . . . . . 2.
2. Hind-wing upperside entirely white . . . . . *venosus* (Stgr.).
   Hind-wing upperside with an anterior yellow area . . . . . 3.
3. Hind-wing with yellow area not entering the cell . . . *halimede* (Klug).
   Hind-wing with yellow area entering the cell . . . . *pleione* (Klug).

♀♀.

1. Fore-wing upperside with deep red markings . . . . . *zoë* (Grand.).
   Fore-wing upperside without red markings . . . . . 2.
2. Fore-wing upperside with a dusky rounded basal area reaching just beyond vein 2 . . . . . 3.
   Fore-wing upperside without a dusky basal area . . . . *pleione* (Klug).

3. Hind-wing underside densely marked with short irregular strigae, the post-discal spots not well defined . . . . . *venosus* (Stgr.).
Hind-wing underside not marked with strigae, the post-discal spots well defined . . . . . *halimede* (Klug).

C. zoë (Grand.).

Appears to connect this group with the preceding one. Seasonal variation slight.

C. venosus (Stgr.) dry-season form **lactea** form. n.

♂. Upperside of fore-wing with thinner black vein-lines that rarely reach the margin; marginal black markings obsolete or absent.

♀. Upperside markings paler; hind-wing without marginal spots. Underside of hind-wing and apex of fore-wing pale pinkish-brown.

♂ holotype labelled : E. Africa : Namanga, 17.ii.1916 (*F. C. Selous*).
♀ allotype labelled : Red Sea (ex Coll. Hewitson). Total of 8 ♂♂, 1 ♀ in the British Museum.

C. halimede halimede (Klug).

The figure given by Klug (*in* Ehrenberg, *Symb. Phys.* pl. 7) indicates a form of the wet-season type with small black marginal spots on hind-wing underside. Fore-wing upperside with marginal black spots on veins 2–5, and the yellow area reaches vein 5. There is not a specimen exactly like this in the British Museum, but a ♂ from Port Sudan approaches it.

Seasonal variation not much marked, but specimens of the dry-season type may be called *leo* (Butl.); in these the hind-wing underside is pinkish-brown.

Both seasonal forms have white and yellow females. The white ♀ of the wet season was named *acaste* (Klug); his figure shows the hind-wing underside yellowish with black post-discal dots. The British Museum contains one from Port Sudan and one from Omdurman. Also two sulphur-yellow females from Port Sudan. All 4 specimens have on the hind-wing prominent marginal black spots.

Judging by the small material in the British Museum this subspecies appears to be no more common than *venosus*.

The name *polycaste* was given by Boisduval to replace *acaste* Klug, but his action was unnecessary.

C. halimede coelestis (Swinh.).

This name will stand for the Arabian subspecies.

♂. Upperside of fore-wing with heavier black marginal border, and the two or three costal spots also strongly marked. Hind-wing without marginal black spots.

♀. Upperside of fore-wing with wide marginal border, the space between this and the post-discal spots narrower than in the nominotypical race. Hind-wing with or without small marginal black spots.

Although there is some variation in the female suggestive of seasonal forms, the ♂ seems to be largely of the " dry " type, this being a little more emphasised in some specimens, and recognised by the underside of the hind-wing and apex of fore-wing having a browner tinge. Females with a brownish tinge on the underside belong to the " dry " type; such females may be entirely yellow, or white (f. *acaste* Klug), or white with a yellow patch on the fore-wing. The

" wet " form of female has the underside of hind-wing white. An extreme example of this form is represented in the British Museum by a specimen taken at Lahej, 23.v.1894. Size well above the average; black border of fore-wing very broad, especially on the costa; hind-wing with large marginal spots.

The type ♂ belongs to the dry form. The British Museum collection contains 15 ♂♂, 14 ♀♀ belonging to the " wet " form, and 22 ♂♂, 34 ♀♀ belonging to the " dry " form.

C. halimede restricta (Roths.).

In this subspecies the marginal black on the fore-wing is narrower and more broken up into spots than in *coelestis*, and so more resembles the nominotypical form. The yellow area on the fore-wing does not reach vein 3. It is also distinguished by its larger size. The dry form, *restricta* (Roths.), is distinguished by the underside coloration, but some females almost exactly resemble the male (1921, Rothschild, *Nov. Zool.* **27** : 146). In most specimens of the ♂ the black vein-lines are thinner and do not reach the margin.

All the specimens in the British Museum from Somaliland, taken between January and June, and between September and December, are of form *restricta*. The wet form was named *aurivillii* Roths., but this name is preoccupied by *aurivillii* Suff., 1904. The name *maxima* is here proposed for the wet form of *restricta*, types (♂♀) from Tareta.

C. halimede restricta wet-season form **maxima** form. n.

The most distinctive character of this subspecies is seen in the ♀ of the wet form. This has a more decidedly wet coloration than the females of the " wet " type found in the two preceding subspecies. The upperside markings are heavier, and the marginal spots on hind-wing usually large. The underside of hind-wing has a darkened proximal area with a prominent large pale discocellular spot.

C. halimede australis subsp. n.

♂. Upperside of fore-wing with yellow area reaching vein 3 or above it, in one specimen extending over most of the wing; marginal border a little wider than in *aurivillii* and more intensely black. Hind-wing with the yellow area usually extended to vein 5. Underside of hind-wing white with a complete post-discal series of small black spots.

♀. Resembles *aurivillii* except that the hind-wing yellow area reaches the basal part of area 5. A white form and a yellow form.

Tanganyika Territory : ♂♀ types labelled : Morogoro : vi.–viii.1922 (*C. G. Kirkham*); also 3 ♂♂, and a yellow ♀ bearing the same data. In addition, 5 ♂♂ labelled : " Germ. East Africa " (ex Coll. H. J. Adams).

C. pleione pleione (Klug).

In this species the distinction between wet and dry forms is very slight, except in some extreme cases.

There is a gynandromorphic example in the British Museum from the Nurse Coll., taken at Aden, 30.ix.1894. It represents the wet type. The right half is ♀ (white f.), and on the posterior part of the hind-wing are three basal yellow streaks of ♂ colouring.

C. pleione heliocaustus (Butl.).

The type represents a dry form. The ♀ f. *eos* (Le Cerf) represents a dry form with bright orange-yellow colouring above.

ione group.

♂. Upperside of fore-wing with a prominent apical patch of bluish-violet or dark crimson, only in one species reduced to very small separate spots. Hind-wing white, sometimes with small marginal spots.

♀. Very variable. Fore-wing underside with a characteristic row of 6–7 submarginal black spots. Fore-wing upperside with or without red apical spots; in some dry-season forms the apical area is entirely red.

Key to ♂♂.

1. Fore-wing upperside apical area with spots of violet or purplish-blue . . 2.
   Fore-wing upperside apical area with spots of dark crimson . . . . . 3.
2. Fore-wing upperside apical area with three prominent spots, no obvious spot in area 8 or dot in 3 . . . . . *erone* (Angas).
   Fore-wing upperside apical area with at least four prominent spots, an elongate one in area 8, sometimes a dot in 3 . . . . . *ione* (Godt.).
   Fore-wing upperside with large apical area of purplish-blue stripes, including a spot in area 3 . . . . . *regina* (Trim.).
3. Fore-wing upperside with crimson apical area to vein 3 . . . *lorti* (Shpe.).
   Fore-wing upperside with crimson apical markings not reaching vein 3 . . 4.
4. Fore-wing upperside with large crimson area usually reaching vein 4, and sometimes forming a small spot in area 3 . . . . . *hetaera* (Gerst.).
   Fore-wing upperside with small or obsolete crimson area, not reaching below vein 5 . . . . . 5.
5. Fore-wing upperside with prominent crimson area, sometimes extending to form a small spot in area 4. A large species . . . *eunoma* (Hopff.).
   Fore-wing upperside with crimson markings comprising at most three small spots, usually only two, sometimes none . . . . . *elgonensis* (Shpe.).
   (A lens will usually reveal one or two crimson scales.)

Key to ♀♀.

1. Fore-wing upperside apical area bearing white spots or an orange-red patch 2.
   Fore-wing upperside apical area bearing metallic or crimson spots, or at least some similarly coloured scales on white spots . . . . . 3.
2. Fore-wing upperside apical area bearing three white spots and a minute anterior fourth spot . . . . . *erone* (Angas).
   Fore-wing upperside usually with four or more apical white spots *ione* (Godt.).
   Fore-wing upperside apical area largely orange-red, bearing a row of black spots . . . . . { *erone*, dry form. *ione*, wet and dry forms.
3. Fore-wing upperside with two rows of metallic purplish-blue spots *regina* (Trim.).
   Fore-wing upperside apical spots dark crimson . . . . . 4.
4. Fore-wing upperside apical spots in two rows . . . . . *lorti* (Shpe.).
   Fore-wing upperside apical spots in one row, small or vestigial . . . . 5.
5. Fore-wing upperside with only the posterior two or three post-discal spots free from the marginal border . . . . . *hetaera* (Gerst.).
   Fore-wing upperside with a series of five or six post-discal spots *eunoma* (Hopff.).
   Fore-wing upperside without distinct post-discal spots; resembles the ♂ *elgonensis* (Shpe.).

C. ione (Godt.).

A very variable species which ranges over the whole continental African area of the genus. It is polymorphic in both sexes, and no subspecies can be

distinguished. The ♂ forms are connected by transitions, but the ♀ forms are clearly defined.

Godart's type was said to have come from Senegal. The form *ione* is represented in the British Museum by a ♂ from Senegal, and a series of ♂♂ from N. Nigeria and the Gold Coast. Similar specimens are represented from Natal.

The various names given to this species were mostly applied to a ♂ and ♀, and as the ♂ varies less widely, some names are not tenable, whilst the others apply only to ♂ forms. This dissolution of the partnership results in some ♀ forms being left without names, but this is remedied here. The ♀ forms number 15, and the following key to their identification is given; six are described as new :—

Key to ♀ forms.

1. Hind-wing underside with veins blackened . . . . . 2.
   Hind-wing underside with veins not blackened . . . . . 6.
2. Fore-wing upperside without red apical area, and rarely with crimson spots 3.
   Fore-wing upperside with red area . . . . . 5.
3. Upperside yellow . . . . . *obsolescens* (J. & T.).
   Upperside white . . . . . 4.
4. Fore-wing upperside within the black apical area an inner row of three or four crimson spots . . . . . *rubidipuncta* (J. & T.).
   Fore-wing upperside without crimson spots . . . . *anomalus* (Auriv.).
5. Upperside yellow . . . . . *primularis* form. n.
   Upperside white . . . . . *hydrophobus* (Suff.).
6. Fore-wing upperside without a red apical area . . . . . 7.
   Fore-wing upperside with a red apical area . . . . . 9.
7. Fore-wing upperside white . . . . . 8.
   Fore-wing upperside yellow . . . . . *coliagenes* (Butl.).
8. Upperside of fore-wing with heavy black markings. Underside of hind-wing yellow or creamy white . . . . . *natalensis* (Stgr.).
   Upperside of fore-wing with weak black markings. Underside of hind-wing freckled with ochreous- or red-brown . . . . *xerophila* form. n.
9. Fore-wing upperside without or with very few black markings . . . . 10.
   Fore-wing upperside with heavy black basal and inner patch . . . . 13.
10. Fore-wing upperside orange area with a row of black spots . . . . . 11.
    Fore-wing upperside orange area without black spots; fore-wing pale yellow, hind-wing buff . . . . . *schuberti* (Suff.).
11. Upperside white . . . . . 12.
    Upperside yellow . . . . . *leda* form. n.
12. Fore-wing underside with veins in distal area, between post-discal spots and margin, blackened . . . . . *cardamines* form. n.
    Fore-wing underside with veins in distal area, between post-discal spots and margin, not blackened . . . . . *jalone* (Butl.).
13. Fore-wing upperside with apical red patch reduced to a submarginal band, with internervular yellowish streaks between the red spots and margin *aurivillii* (Suff.).
    Fore-wing upperside with apical red patch enclosing a row of black spots . 14.
14. Upperside white . . . . . *leucozona* form. n.
    Upperside yellow . . . . . *xanthozona* form. n.

C. ione ♂ form *ione* (Godt.)

Upperside of fore-wing with the purple apical patch edged prominently with black on the inner side. Hind-wing with the veins blackened, usually only distally; a marginal series of small vein-spots. *Underside* of hind-wing with the veins blackened, usually only

in the distal part, but more heavily than on upperside; a thin marginal black line and small marginal vein-spots; a post-discal row of small black spots, more emphasised when the veins are all darkened.

C. ione ♂ form *phlegyas* (Butl.).

A variable form, as indicated by the additional names *bettoni* Butl. and *difficilis* Shpe., here treated as synonyms.

Upperside of fore-wing with apex usually more or less dusted with grey. The inner black edging of the purple patch less heavy than in forms *ione* and *imperator*; basal area only slightly dusted with black. *Underside* of hind-wing with or without post-discal spots, no distinct marginal spots, and veins either not at all darkened, or only slightly so near the margin.

C. ione ♂ form *imperator* (Butl.).

Upperside with heavy black edging on inner side of the purple patch; basal area of fore-wing usually strongly dusted with black; hind-wing with marginal spots. *Underside* of hind-wing with marginal spots not well marked; veins darkened near the margin; a post-discal stripe, not broken up into spots. Occasionally this stripe is quite absent.

C. ione ♂ form *bacchus* (Butl.).

Hind-wing with all the veins strongly blackened on both sides, usually the black scaling enlarged to spots at the margins. Upperside of fore-wing with inner edge of purple patch not strongly blackened. Underside of hind-wing with or without post-discal spots.

C. ione ♂ form *jalone* (Butl.).

This belongs to the dry-season, and exhibits much variation on the hind-wing underside. The name *buxtoni* Butl. is applied to specimens with the post-discal spots on the hind-wing underside vestigial or absent. As all transitions occur this name should be treated as a synonym.

C. ione ♀ form *jalone* (Butl.).

The usual dry-season form with orange-red apical area on the fore-wing.

C. ione ♀ form **primularis** form. n.

Upperside primrose-yellow; markings of both sides as in f. *hydrophobus* (Suff.).

Holotype labelled : N. Nigeria : Maidugari, 20–26.vi.1928 (*J. B. Welman*); " German E. Africa " (ex Coll. Adams), 1; Itumba (ex Coll. Joicey), 1. The two latter specimens are more heavily marked with black, and the one from Itumba has the light areas of fore-wing tinged orange.

C. ione ♀ form **cardamines** form. n.

Upperside white with orange apical patch of varying size; fore-wing without prominent black basal and inner markings, excepting the usual post-discal spot in area 1b. Underside of fore-wing in the distal marginal area, between the post-discal spots and the margin, with the veins blackened; apical area pale buff or creamy white. Hind-wing with the veins only darkened near the margin; post-discal stripe heavily marked; ground-colour pale buff or creamy white.

Holotype labelled : Gold Coast : Tamale (*Armitage*), and 2 with same data; also 1 specimen from N. Nigeria, S.E. Kano, Azare (*Dr. Ll. Lloyd*).

This form resembles *hydrophobus* (Suff.), but in this all the veins of the hind-wing are entirely blackened on the underside.

C. ione ♀ form **leucozona** form. n.

This is the form usually called *ione* Godt. ♀.

Upperside white. Fore-wing with red apical patch; a black basal area reaching the origin of vein 2 and produced to a stripe along the inner area, this stripe usually not touching the basal part of vein 2. Similar markings are also characteristic of *natalensis* (Stgr.), which is the entirely white form.

Holotype from KENYA : Taveta.

C. ione ♀ form **xanthozona** form. n.

Marked as in *leucozona*, but the upperside is primrose-yellow. A specimen from Tara (or Taru) xii.1936, has the black markings so extensive that on the fore-wing the inner part of the red patch is reduced to four small spots, and the yellow area consists of a narrow discal band; on the hind-wing is a white, instead of yellow, discal patch, separated by a black line from a row of four white post-discal spots all produced to a point.

4 specimens from Kenya. Holotype from KENYA : Taru Desert, 15.xii.1896 (*C. S. Betton*); 1 labelled Taru, xii.1896; 1 labelled Mamboio; 1 labelled Mombate.

C. ione ♀ form **leda** form. n.

A dry-season form resembling *jalone* (Butl.), but with the upperside primrose-yellow.

Only one example in the British Museum. This is from ABYSSINIA : Tchaje Djila, Aroussi, 27.i.1905 (*Ph. C. Zaphiro*).

C. ione ♀ form **xerophila** form. n.

This represents the dry *natalensis* form. Upperside of fore-wing with reduced black markings, and usually with four or five submarginal white or pale buff spots. Underside of hind-wing and of apical area of fore-wing freckled with ochreous- or reddish-brown.

Holotype labelled: Katamega River to Chambezi River, Xmas, 1916 (*T. A. Barns*). Other specimens in the British Museum from N.W. Rhodesia, Katanga, Nyasaland and Transvaal.

A gynandromorphic specimen of *ione* is in the British Museum (ex Coll. Adams). It is figured by Lathy, 1906, *Trans. ent. Soc. Lond.* **1906** : 18, pl. ii, figs. 7, 8. It represents the *bacchus* type of form, the left fore-wing and both hind-wings being of form *anomalus* (Auriv.). The right ♂ fore-wing is slightly marked with the ♀ pattern.

C. hetaera (Gerst.).

The ♂ exhibits much variation in the size of the crimson patch which, however, rarely extends below vein 4. There does not seem anything to justify the retention of *puniceus* (Butl.) as a separate species; the type is a specimen of the dry season. Seasonal markings and colouring on the underside are not distinctive in the ♀, and are not strongly emphasised in the ♂. The markings of the upperside afford a better guide to the seasonal character. In the genus as a whole, extensive black patterns, such as wide marginal borders, are an indica-

tion of the wet type; on the other hand, reduced black areas and extended red colouring indicate the dry-season type.

The name *hetaera* applies to the wet form, and *puniceus* can be treated as the dry-season form. The ♀ form *foliaceus* (Butl.) is white with very broad black borders, and the yellow phase of this is *sulfureus* (Auriv.). A second yellow ♀ form, apparently of the wet season, is undescribed. The name *strix* is proposed for this.

C. hetaera (Gerst.) ♀ form **strix** form. n.

Upperside yellow with black borders of moderate and even width. Fore-wing with a prominent black subtornal spot; subapical spots rather small, with only a trace of red; basal area not dusted with black. Hind-wing with the black border less dentate than in *sulfureus*; no black discal line nor proximal black dusting. Underside of hind-wing and of apical area of fore-wing reddish-ochraceous with prominent darker freckling suggestive of dry-season markings.

Type labelled : Kenya : Kipini, on coast at mouth of Tana, iii.1912 (*S. A. Neave*); also three others from Lake Mpeketoni, near Kipini, 4–5.iii.1912 (*S. A. Neave*).

C. hetaera dry-season form *puniceus* (Butl.).

The white ♀ usually has well-developed subapical red spots, and all transitions occur to to those with entirely white spots which are rare.

C. hetaera ♀ form *albomaculatus* (Auriv.).

The subapical spots are either entirely white or with the red scaling vestigial. The submarginal spot in area 2 on the fore-wing is usually free. The yellow form is *flavescens* (Auriv.).

A third ♀ form is represented by a single specimen in the British Museum for which the name *mirabilis* is proposed.

C. hetaera ♀ form **mirabilis** form. n.

Appears to be an extreme dry-season form. Upperside lemon-yellow. Fore-wing without a discocellular spot, but a faint brown mark is present; outer marginal border, instead of being black, is pale cinnamon; three red subapical spots, in areas 4 to 6, prominent and sharply defined. Hind-wing with indistinct marginal spots pale cinnamon. *Underside* of fore-wing white, with yellow flush; apical area pinkish-brown, with darker brown subapical spots; a faint brown discocellular spot. Hind-wing pale pinkish-brown without mottlings, the darker brown discal line thin.

Type labelled Kisi, March (ex Coll. E. M. Sharpe, via Coll. Joicey). Probably from Kisii in south-western Kenya.

C. eunoma (Hopff.).

This species does not seem to occur either in Kenya or Uganda, but probably represents *hetaera* in eastern Tanganyika Territory and south-east Africa.

The name *chromiferus* Roths., based on Zambesi specimens, is a synonym of the nominotypical form. Specimens in the British Museum do not show any defined seasonal form.

The ♀ sometimes has two small subapical red spots or these represented by some red scales. Some females, probably of the dry season, have a narrower marginal border on

the fore-wing, and smaller post-discal spots; the hind-wing with only traces of marginal spots.

In the British Museum from Natal, Beira and Mashonaland; also 1 ♀ from Chinde, Nyasaland.

C. elgonensis (Shpe.).

The long series of this species in the British Museum does not show any distinct seasonal forms. The ♀ is variable. Upperside of fore-wing with outer border wider than in the ♂, its inner edge more or less crenulate or dentate; a small submarginal spot in area 2, sometimes joined to the border; sometimes a black subtornal dot in 1b; two white subapical spots, usually dusted with red but sometimes entirely red, and two smaller pale spots often present in areas 3 and 4. Underside as in the ♂. Specimens from the southern and eastern parts of Kenya differ from the nominotypical subspecies.

C. elgonensis kenia subsp. n.

♂. Upperside of fore-wing with marginal black very narrow, not reaching below vein 3 and often only to vein 4; the two apical red spots usually prominent, and placed outside the edge of the black border; discocellular spot only a dot. ♀ resembles the ♂, except that the black border on fore-wing is more extended, in one specimen reaching vein 2, and in the other vein 1a. Underside of both sexes as in the nominotypical race.

Holotype ♂ and Allotype ♀ labelled: KENYA: S.E. slopes, 6000 to 7000 feet, 3–12.ii.1911 (*S. A. Neave*); also a series of ♂♂ and a second ♀ bearing the same data as the type. Kikuyu Escarpment, Kijabe to Limoru, Uganda Rly., 6800–7400 feet, 6–10.iii.1911 (*S. A. Neave*), 4 ♂♂; Kikuyu, 11.xii.1900 (*St. A. Rogers*), 1 ♂; id., no date, 2 ♂♂; Escarpment, 6500–9000 feet, i.1901 (*W. Doherty*), 1 ♂; id., xii.1900, 1 ♂; id., x.–xi.1900, 1 ♂; Eldoma Ravine, 20.iii.1898 (*Maj. E. M. Woodward*), 1 ♂; Rohuttee, Nyeri, 7.v.1922 (*E. N. Wickham*), 2 ♂♂; Roromo, Kikuyu, 12.i.1900 (*R. Crawshay*), 1 ♂.

C. elgonensis glauningi (Schul.).

The nominotypical form is represented in the British Museum by a pair from the Banso Mountains, N.W. Cameroons. Specimens from Uganda (Mabiri Forest) may be placed with this provisionally. The ♀ differs from the ♀ of the two preceding subspecies in having a much wider black border on the fore-wing. In the Cameroons specimen the fore-wing bears two small red subapical spots as in the ♂, but in the four Uganda specimens, these spots are quite absent, and the marginal border has no trace of other spots as in the nominotypical subspecies. When further material from the Cameroons becomes available, it may be found that the Mabiri Forest specimens are different. Associated with these is a ♂ from Unyoro, Budongo Forest, 3400 feet, 11–15.xii.1911 (*S. A. Neave*), and a ♂ from Lake George (south), vi.1911 (*C. C. Gowdey*).

danae group.

♂. Upperside of fore-wing with apical area red, edged with black along the inner side, or is ochre-yellow and more extended. Underside of hind-wing usually with a curved row of black post-discal spots, but sometimes these are absent.

♀. Upperside of fore-wing with restricted red apical patch bearing a row of black spots; or apical area frequently bearing a row of streaks which may vary from orange to white in colour; basal area of wing darkened. Hind-wing with a post-discal row of spots as on ♂ underside.

Key to ♂♂.

1. Fore-wing upperside with apical area ochraceous-yellow . *hildebrandti* (Stgr.).
   Fore-wing upperside with apical area red . . . . . 2.
2. Fore-wing upperside with red area evenly edged with black proximally *danae* (Fabr.).
   Fore-wing upperside with black edging to red area forming a spot in area 3 *guenei* (Mab.).

Key to ♀♀.

1. Hind-wing underside with discocellular spot centred with orange or yellow. Fore-wing upperside with apical area largely ochraceous, rarely only with short stripes . . . . . *hildebrandti* (Stgr.).
2. Hind-wing underside with discocellular spot centred with red. Fore-wing upperside with apical area largely red, sometimes with short orange, yellowish or white stripes . . . . . *danae* (Fabr.).
3. Hind-wing underside with discocellular spot centred with creamy white. Fore-wing upperside with a narrow red subapical band. Madagascar species . . . . . *guenei* (Mab.).

C. hildebrandti (Stgr.).

The ♀ of this species is sometimes very similar in appearance to the ♀ of *danae annae* (Wllgr.) or *pseudacaste* (Butl.), but can be separated certainly by the colour of the discocellular spot as stated in the key. Also it is usually larger and without apical red; the ochraceous or orange-yellow apical area is large, rarely reduced to streaks, and rarely white. Hind-wing underside with post-discal spots larger and more sharply defined than in most specimens of the allied forms. The ♀ is variable on the upperside.

The typical ♀ is white, with large apical area ochraceous-orange. The form *blanca* (Suff.) is also white, with ochraceous-yellow streaks in the apical area. The form *clara* (Suff.) resembles *blanca* with yellow upperside. A third form appears to be unnamed, and the name *bicolor* is proposed.

C. hildebrandti form **bicolor** form. n.

It resembles f. *hildebrandti*, but the upperside is yellow. Type specimen labelled: Tanganyika Territory: Morogoro, vi–viii.1922 (*C. G. Kirkham*), also in the British Museum from Tanganyika Territory, Kilimatinde, Boma District, i–iii.1915 (*E. C. Holtom*), 2; Tabora, 1; Kenya, Voi Plantations, 5.xii.1912 (*C. M. Smyth*).

The forms *clara and blanca* occur in both seasons.

The dry-season form is *lanzi* (Bart.).

The species is not uncommon in Tanganyika Territory, and extends to Kenya chiefly in the coastal area, and is rare in Uganda and Nyasaland.

C. danae (Fabr.).

The nominotypical subspecies is confined to India, but there does not seem any reason to consider the African *annae* Wllgr. and *eupompe* Klug as distinct from it.

C. danae annae (Wllgr.).

Distinguished from other subspecies by the red on the fore-wing extending into area 2, where it forms a prominent spot.

C. danae walkeri (Butl.).

This represents the subspecies from Angola, until recently considered a separate species.

Upperside of fore-wing with black border of red area wider, entering the cell; hind-wing with heavier marginal markings. ♀ with the basal brownish-black suffusion on fore-wing reaching the discocellular spot.

Apparently rare; only 2 ♂♂, 3 ♀♀ in British Museum, comprising the original four from Elephant Bay, and a ♀ from "Angola, vii.1903 (*R. A. Martin*)."

C. danae pseudacaste (Butl.) (= *phoenius* Butl., *miles* Butl.).

The oldest name for the subspecies which ranges from Tanganyika Territory to Abyssinia.

The red area of the fore-wing stops at vein 3 or extends into area 2 as a very small spot. Hind-wing underside with discal spots well marked; veins black near the margin, sometimes entirely blackened.

The name *fallax* (Wichgr.) can be used to denote the dry-season form. The type is in the British Museum (ex Coll. Joicey). Two aberrations of the ♂ are in the British Museum. In one the apical area of fore-wing is lemon-yellow instead of red, and the underside of this area is tinged with yellow; Taveta, ex Coll. Adams. In the other on the underside, the discocellular spot on both wings is produced to join the post-discal spot in area 4, forming a stripe in which, on the hind-wing, is a red central line; fore-wing also with a short blackish stripe from post-discal spot in area 2 proximad, and an oblong patch of the same colour below vein 2.

The British Museum contains a small series of a form from west Uganda which, in the ♂, is connected by transitions with typical *pseudacaste*, and occurs with it in the same area. It represents a distinct local form of the wet season. The name *nigrilinea* is here proposed for this form.

C. danae pseudacaste form loc. **nigrilinea** form. n.

♀. Upperside white. Fore-wing with four or five short creamy white subapical streaks, with a few orange-red scales proximally of them in areas 4 and 5. *Underside* of fore-wing with apical area to vein 3, sulphur-yellow to white. Hind-wing similarly coloured, with the black veins and post-discal spots as in the ♂. One ♀ has the apical area of fore-wing red as in *pseudacaste*.

♂. Hind-wing underside with all the veins black, thickening near the margin; post-discal spots heavy and sharply defined.

♀ holotype and ♂ allotype labelled: Uganda, S.E. Ankole, 4400–4800 feet, 4–8.x.1911 (*S. A. Neave*); also 5 ♂♂, 4 ♀♀ with the same data. Uganda, banks of Victoria Nile, near Masindi Port, 3400 feet, 20–22.xii.1911 (*S. A. Neave*), 2 ♂♂; Kampala, Uganda, ii.1894 (*G. F. Scott Elliot*), 1 ♀. Total of 8 ♂♂, 8 ♀♀.

Yellow females are f. *sulphurosus* (Thur.).

C. danae eupompe (Klug).

This subspecies differs from *pseudacaste* in the ♂ in the reduction of markings on the hind-wing underside, usually only the discocellular dot present; in the ♀ by the post-discal spots less strongly marked, and dark basal area on fore-wing less heavy and much reduced

on the underside. Specimens found in parts of west Abyssinia are intermediate between the two subspecies.

The ochraceous form of ♀ is named *pulchra* (Ungem.), and the white ♀ without red colouring on fore-wing is named *depurpurata* (Ungem.).

The dry-season form is *dedecorus* (Feld.).

The subspecies, described as *purpurea* by Wichgraf in 1913 and said to come from Guinea, was based upon a single specimen now in the British Museum. This is a typical *danae danae* and must have come from India.

C. danae dulcis (Butl.).

The name *immaculatus* (Swinh.) refers to a form of ♂ with the underside of hind-wing very little marked, as in *eupompe*.

The name *dirus* (Butl.) refers to a ♀ form in which the subapical band on fore-wing is narrow, usually formed of short stripes which are usually pinkish and tinged with white, but sometimes red. A specimen of this form is in the British Museum from Pasni, S. Baluchistan, taken 4.iv.1935.

eucharis group.

This group appears to possess only one species. The ground-colour is white to yellow. The apical area is orange or yellow, and reaches below vein 3; its inner side is edged partly with black, but in dry-season forms often without such black edging; marginal black usually expanded above the tornus.

♀. White or yellow, more spotted than the ♂. Fore-wing with apical orange area reduced or absent; post-discal black spots, the one in area 3 prominent, but all sometimes united with a black apical area; a prominent discocellular spot. Hind-wing with a marginal row of small rounded black spots, reduced or absent in dry forms.

C. eucharis (Fabr.).

The oldest name for a series of forms formerly, and until now, treated as distinct species.

Two specimens are in the British Museum (ex Coll. Swinhoe) of the (?) dry-season ♂ in which the orange apical area is absent. The specimens are creamy instead of chalky-white; hind-wing underside without markings. These are from Bombay, 1887, one taken in November and the other in January.

C. eucharis evarne (Klug).

There is very little difference between this insect and the Indian one, especially are the females remarkably alike. The form *pallens* (Moore) from India, in which the dark spot is absent from the edge of the orange area of the fore-wing, is hardly distinguishable from most specimens of *evarne*.

In *evarne* the upperside is yellowish-white, the hind-wing paler and often white. The orange area may extend to the cell, but not always, though it usually reaches the cell in the wet form; outer black border narrower than in *auxo*. Hind-wing underside unmarked except for a minute black discocellular dot. Dry-season form with the upperside white or with a yellow tinge only; orange area usually not reaching the cell.

Specimens with both wings white often occur, irrespective of the season. In Somaliland the insect is rarely yellow in both sexes.

♀. Very variable, white or yellow; orange apical area of varying extent and sometimes absent, the fore-wing discocellular spot smaller than in *auxo*; the orange area, when present, does not usually reach the cell.

The subspecies *evarne* is western and northern, and in its southern extension occurs chiefly in the Rift Valley region, and rarely in Rhodesia.

C. eucharis incretus (Butl.).

Previously associated with *auxo* as a distinct species, but here considered as a subspecies with *auxo*. This and the two following races are primrose-yellow; the orange apical area usually reaches the cell, and the outer black border is usually prominent. Hind-wing underside with a prominent discocellular dot, a costal dot, and usually another in area 3.

♀. Fore-wing with prominent rounded black discocellular spot; orange area, when present, usually reaches the cell. In the extreme dry form it closely resembles *evarne* ♀.

The *auxo* series of forms, represented by *auxo*, *dissociatus* and *incretus*, form the extension of *eucharis* south of Tanganyika Territory. To the north, the *incretus* race mingles with *evarne*, and the two occur together in several places in Kenya and Tanganyika Territory. Illustrating this are the following specimens in the British Museum collection. Tanganyika Territory: of *auxo*, wet form, 73; dry form, 7; *evarne*, wet form, 23; dry form, none. Uganda: of *evarne*, wet form, 55; dry form, 6; *auxo*, wet form, 22; dry form, none. The subspecies *auxo* does not reach the Sudan, and *evarne* does not extend farther south than N. Rhodesia.

C. eucharis dissociatus (Butl.).

The specimens belonging to this subspecies are white, with a narrow yellow border along the inner edge of the orange apical patch; in the wet form there is usually some black scaling along the inner edge of the orange area. The dry-season form resembles *evarne*, but the orange reaches the cell. The ♀ is white or with yellow tinge, and not distinguishable from similarly coloured *incretus* females.

Distributed from Nyasaland (east of the Lake and at its south-west corner) to N.E. Rhodesia, Mashonaland and Matabeleland, apparently not common.

C. eucharis auxo (Luc.).

The southern subspecies. The specimen upon which Butler founded the name *syrtinus* must belong here, although it bears the locality "Senegal."

antevippe group.

The species *antevippe* (Boisd.) is well known as *achine* Stoll, but the latter name sinks as a primary homonym (teste Hemming, 1934, *Gen. Names Hol. Butt.*: 135). The insect figured by Stoll is the same as the subspecies *gavisa* (Wllgr.).

♂. Ground-colour white. Fore-wing with red or orange-red apical area, not extending below vein 3, and usually entirely bordered with black except in dry-season forms in which the black edging is reduced or absent; the proximal edge of the red area may be straight or indented; a black discocellular dot may or may not be present, a black stripe often present in area 1 from the base, not reaching tornus. Hind-wing with a narrow black marginal border or with a marginal row of vein-spots, these markings reduced or absent in dry forms; often a black post-discal transverse stripe that may reach the outer margin.

Underside of fore-wing with an orange subapical area of less extent than above, but this area may be yellow (wet f.) or brownish (dry f.); usually a black discocellular dot. Hind-wing with a black discocellular dot, edged with orange on the inside.

♀. White or yellow. Upperside with prominent dark markings. Fore-wing with

orange apical patch either divided into two narrow bands, reduced to a single band, or quite absent; a post-discal black spot in area 1b usually prominent, or united with a posterior basal stripe; cell more or less dusted with black, or more or less occupied by a black basal area; a black discocellular dot often present. Hind-wing with at least a black costal spot, but usually also a spot below this in area 6, and a more or less marked transverse discal or post-discal band as in many males; basal area more or less darkened, and often a basal costal stripe in addition to the transverse band.

Underside of fore-wing with nearly always a posterior black spot or patch. Hind-wing with an orange or brownish transverse band, more or less marked, extending from the costa outwards to area 4, and thence inwards to vein 1b. Both wings usually with a discocellular dot as in the ♂.

Key to ♂♂.

1. Fore-wing upperside with apical area red. Both wings with nearly always a discocellular spot on both sides . . . . . *antevippe* (Boisd.).
2. Fore-wing upperside with apical area orange to orange-red. Both wings always without a discocellular spot . . . . . *evenina* (Wllgr.).

Key to ♀♀.

1. Both wings with a black discocellular spot. Fore-wing upperside with a triangular or diffuse dark basal area . . . . . *antevippe* (Boisd.).
2. Both wings without a discocellular spot. Fore-wing upperside with a rectangular or square and sharply defined dark basal area *evenina* (Wllgr.).

C. antevippe antevippe (Boisd.).

The type ♂, without locality, and a cotype ♂ from Senegal, are in the British Museum (ex Coll. Oberthür).

♂. Upperside without inner black edging to the red patch. Underside of hind-wing white, the veins only black near the margin. An extreme wet form occurs in which the apical black on fore-wing is widened along the outer margin, and the reduced red area sometimes dusted with black along inner edge.

♀. Usually with prominent red apical area (= f. *carteri* Butl.). A minority with a single subapical orange band formed of short bars.

Dry-season form on fore-wing less darkened. Hind-wing usually with separate marginal spots. ♀ with broad red apical area, the dark markings reduced, especially on the fore-wing.

The British Museum contains a curious ♂ specimen of the wet form from Suakin, i.1924 (ex Coll. Joicey).

The red apical patch small and somewhat ovate, only reaching vein 4; between the teeth of the black margin there is some pale orange scaling. Underside with entirely white ground-colour, and apical yellow patch smaller than usual.

C. antevippe zera (Lucas).

The oldest name for the subspecies that ranges from the Sudan to Tanganyika Territory (the northern part to about Lat. 6°, and not including Zanzibar). The black markings are more developed than in the western race; on hind-wing underside the veins are blackened as far as the cell.

Wet-season form *helle* (Butl.) (= *subvenosus* Butl., *laura* Shpe.). The type has on the fore-wing a small basal area of black dusting, but this is frequently absent. A minority of specimens approach the nominotypical *antevippe* in having a short inner marginal stripe on the fore-wing, with a similar costal stripe on the

hind-wing. This form occurs more often in the coastal and eastern area of Kenya, and in Tanganyika Territory.

A ♂ from Voi, Kenya (July), has the apical patch pale orange.

♂ form *clarescens* (J. & T.) resembles a strongly wet form with upperside flushed with yellow; from W. Tanganyika Territory.

The ♀ of *helle* has usually narrow and pale apical markings on the fore-wing.

Dry-season form *zera* (Lucas) (= *ithonus* Butl., *hippocrene* Butl., *ignifer* Butl., *hyperides* Butl.). Underside of hind-wing with the veins usually darkened.

Form *harmonides* (Butl.) (= *simplex* Butl., *damarensis* Auriv., *lüderitzi* Suff.) belongs to an extreme dry-season type. Upperside with very slight black markings, and hind-wing usually immaculate on both sides.

C. antevippe gavisa (Wllgr.).

Distinguished by the posterior black stripe on fore-wing upperside. The ♀ was figured by Cramer as *achine*, and the ♂ was described by Wallengren as *gavisa*; both represent the wet-season form. Underside of hind-wing with veins usually heavily blackened. Upperside of hind-wing with black border more prominent than in the preceding races.

The other forms of the wet season are *helle* (Butl.), which occurs in a minority, and *hero* (Butl.), distinguished by the marginal spots of hind-wing being separate in both sexes, the ♀ hind-wing being much lighter than in other wet-season specimens.

The dry-season form cannot be distinguished from *zera* (Lucas), and there is an extreme form which, similarly, is the same as *harmonides* (Butl.).

The specimen placed by Butler as the ♀ of his *halyattes* belongs to the f. *zera*.

C. evenina evenina (Wallgr.).

This name applies to the wet form, and the dry form is *deidamioides* (Auriv.).

The amount of apical red on the fore-wing is variable, but is more extensive in the dry form. The hind-wing markings vary considerably, sometimes in wet specimens reduced as much as in some dry ones. In the extreme dry form the ♂ is without dark inner edging to the apical area, has no black along inner margin of fore-wing, and has very slight costal black on the hind-wing. ♀ with strongly defined red area, and dark basal markings dusted with white on fore-wing; hind-wing with small marginal spots, and very small costal spot.

C. evenina sipylus (Swinh.).

This is distinguished, in the wet form, by the heavy black inner border of the red area, and wide marginal border on hind-wing. Underside of both wings with veins darkened near the margin; hind-wing with a more or less defined, and somewhat interrupted heavy submarginal line, the veins strongly darkened between this line and the margin. The ♀ is distinguished by the more consistently wider black borders on both wings, but especially on the hind-wing.

The nominotypical form *evenina* occurs in a minority in the areas of the S.E. Congo and Tanganyika Territory.

The dry-season form rather resembles the nominotypical one. Upperside of hind-wing with heavy marginal spots or a marginal band. Underside of hind-wing usually with a submarginal line, and the veins darkened in the distal area.

Three interesting forms of the wet-season ♀ from Tanganyika Territory (one extending to Rhodesia), are in the British Museum and are here described.

C. evenina sipylus ♀ form **granti** form. n.

Upperside sulphur-yellow. Fore-wing apical area with outer row of small spots which are yellow or tinged orange, the distance between the edges of the apical and basal black areas being more than in the normal ♀. Hind-wing without a dark discal band, but with sharply defined costal patch as usual in the species.

Type labelled : Tanganyika Territory : Kigoma District, Ruchugi River, Ujiji, 9.xi.1922 (*C. H. B. Grant*); also from Tanganyika Territory : Kilimatinde, Boma District, i.–iii.1915 (*E. C. Holton*), 1; Tabora, Ounyanyembé (*R. P. Hauttecoeur*), 1; Plains 20 miles west of Arusha, 4000 feet, 16.ii.1921 (*T. A. Barns*), 1 (paler specimen); Rhodesia : Chambezi River, ii.1917 (*T. A.Barns*), 1.

C. evenina sipylus ♀ form **johnstonei** form. n.

Upperside with pure white ground-colour. Fore-wing with six sulphur-yellow submarginal spots, larger than in *granti*; inner edge of apical black area bordered broadly with yellow in areas 2 to 5; dark basal area more greyish than is usual. Hind-wings as in *granti* save for the white colour.

Type from Tabora, 15.iii. (*R. F. Johnstone*).

C. evenina sipylus ♀ form **canus** form. n.

Upperside with all light markings greyish-white, but subapical spots on fore-wing slightly cream colour. Hind-wing basal area strongly dusted with black over a creamy tinge, and discal narrow dark band present. The light discal area on fore-wing is wide as in the two preceding forms. Underside similar to some normal females. Hind-wing with large basal area and a marginal border darker and more yellowish than discal area of wing.

Type labelled : Itumba District (*Rev. G. Wood*), one specimen.

In addition to the above the ♀ f. *flavofasciata* (Neust.) represents a normally dark banded ♀ with yellow colouring.

C. evenina xantholeuca (Shpe.).

This was described again in 1929 by Le Doux as a distinct species under the name of *confusus*. It represents a well-defined race that ranges over a small area to the exclusion of other forms of the species. It extends over north central Tanganyika Territory to the Victoria Nyanza, Kavirondo, and Uganda to Lake George. In the British Museum from the Boma District, Tabora, Mkalama, Kome Is., Kachuku Magala, the Craters District, Kavirondo, Uvira, Nandi, Nyanza Province, Victoria Nyanza, Lake George. Most specimens are from Tanganyika Territory.

In this subspecies the markings characteristic of *sipylus* are more emphasised on the underside. Hind-wing with all the veins blackened, as well as those crossing the red area of fore-wing. Hind-wing with a dark submarginal band, always broken in area 4, and not extended below vein 1b; this band may be absent or only represented by the costal spot.

The ♀ exists in two forms. These are characterised by the black basal area of fore-wing being diffuse and not sharply defined; also on the hind-wing there is no transverse discal band. In one form the subapical spots are of the normal orange colour, and in the other form they are of the same white ground-colour or are creamy. For this latter form the name *ledouxi* is proposed.

C. evenina xantholeuca form **ledouxi** form. n.

Type labelled : Kisii District, S. Kavirondo, 5000 feet, 9–12.v.1911 (*S. A. Neave*). Also in the British Museum 11 specimens from Kavirondo, the east of Victoria Nyanza, Nandi, Kuju River.

C. evenina casta (Gerst.).

This is the northern race, and is in the British Museum from Kenya, N. Uganda and Somaliland.

Resembles the nominotypical *evenina* but always distinguished by the absence of black edging along the inner margin of the orange area in the ♂. ♀. Upperside tends to be darker than in *e. evenina*; hind-wing underside with a well-defined discal and submarginal band, the latter extending from vein 1b to vein 4; these markings are absent in the extreme dry form.

The form described under *liagore* (Klug) by Le Cerf as *castina* appears to belong here and not to *liagore*; it is, in fact, judging by the description and figure, identical with specimens of typical *casta*.

A comparison of the series of *evenina* and *liagore* in the British Museum shows nothing by which these forms can be connected. In *evenina* the orange patch is usually extended to area 2 (between veins 2 and 3), but in *liagore* it reaches vein 2; on vein 3 there is almost always a black marginal streak which is longer than any of the other similar streaks. Again, the basal black scaling on fore-wing, and costal black border on hind-wing, mentioned in the description of *castina*, are essentially characters of *evenina* and never of *liagore*. The size, too, of *castina*, as shown in the figure, is larger than is usual in *liagore*, of which only 1 ♂ of this size exists in the British Museum.

evippe group.

♂. Upperside of fore-wing with orange or red apical area not reaching below vein 3, bordered with black all round, usually narrowly so on the costa; in dry-season forms the proximal black edging is narrower; veins crossing apical area mostly black, at least veins 4 and 5; a black discocellular dot which may be absent in dry forms. In some forms there is a post-discal posterior black spot, or a black inner stripe. Hind-wing with small marginal vein-spots or a border of varying width; sometimes a black costal stripe and basal stripe. *Underside* of fore-wing usually with an orange subapical band, or the apical area entirely yellowish; a black discocellular dot usually present, and often a blackish posterior spot or stripe. Hind-wing with discocellular dot edged with orange on the inner side; no other markings except sometimes a dark submarginal band.

♀. White or yellow. Fore-wing in the apical area usually with a narrow band of orange or yellow spots, but this may be vestigial or absent, or the markings may be as in the ♂; an inner black stripe or posterior spot usually present. Hind-wing with small marginal vein-spots, or larger connected spots with a post-discal band, or with a broad marginal border. *Underside* of fore-wing more or less as in the ♂. Hind-wing with at least a vestige of a dark costal spot, and with usually a narrow band formed as in the preceding group; a discocellular dot as in the ♂.

Key to ♂♂.

1. Fore-wing underside with the apical area distinctly yellowish; no subapical orange band . . . . . 2.
   Fore-wing underside without yellow apical area; usually with a subapical orange band . . . . . 3.

2. Fore-wing upperside with black apical area bearing a red band *etrida* (Boisd.).
   Fore-wing upperside with apical area orange; proximal side of orange area tinged with yellow and narrowly edged with black . . . *ephyia* (Klug).
3. Hind-wing upperside with outer marginal black border complete, or marked by a series of spots . . . . . 4.
   Hind-wing upperside with outer marginal black border usually consisting of an anterior patch, but if complete it bears small white spots at least in areas 1b, 2 and 3 . . . . . *daira* (Klug).
4. Species below average size. Fore-wing upperside with apical area orange-red. Fore-wing underside with a black inner marginal stripe or a posterior distal spot; a black discocellular spot or dot, also present on upperside . 5.
   Species of average size. Fore-wing upperside with apical area red. Fore-wing underside, if without a black inner marginal stripe, a discocellular dot present on both sides; if with a black inner stripe, a discocellular dot not present on upperside . . . . . *evippe* (Linn.).
5. Fore-wing underside with five small dark subapical spots in areas 3, 4, 5, 6 and 8 . . . . . *rogersi* (Dixey).
   Fore-wing underside without subapical spots . . . . . *pallene* (Hopff.).

Key to ♀♀.

1. Fore-wing upperside with a small black spot in area 3 . . *etrida* (Boisd.).
   Fore-wing upperside without a spot in area 3 . . . . . 2.
2. Hind-wing upperside with a marginal black patch above vein 5, marginal spots below this vein. . . . . *daira* (Klug).
   Hind-wing upperside with complete outer marginal black border or row of spots . . . . . 3.
3. Fore-wing underside with yellowish apical area . . . . *ephyia* (Klug).
   Fore-wing underside without yellow apical area . . . . . 4.
4. Fore-wing upperside with two rows of orange-red spots . . *rogersi* (Dixey).
   Fore-wing upperside with the red or orange-red apical markings not forming two rows or bands . . . . . 5.
5. Hind-wing upperside with wide dark marginal border bearing white streaks, species below average size . . . . . *pallene* (Hopff.).
   Hind-wing upperside with narrow black marginal border, either complete or formed of spots, and often separated from a black post-discal band by a submarginal band or row of spots of the ground-colour . . *evippe* (Linn.).

C. evippe evippe (L.).

The nominotypical form belongs to the wet season, and the ♂ is the same as *Papilio rhexia* Fabr. (Watkins, 1923). This form is fairly constant, and is without post-discal markings on the hind-wing.

The British Museum contains a specimen of an albinistic ♂, a very rare type of variation in butterflies. This specimen has the ground-colour and subapical spots of the fore-wing chalky-white, whilst the underside is entirely chalky-white without markings. It was taken in northern Nigeria by E. C. T. Clouston.

C. evippe evippe form **leucoma** form. n.

The ♀ exists in four forms, and the pale yellow one can be taken as typical. For the form with entirely white ground-colour, the name *leucoma* is proposed. Type labelled : Sierra Leone : Freetown (*A. Mocquerys*). For the form with entirely ochreous-yellow upperside, the name *hanna* (Herbst) can be used. In these forms the apical area is without a subapical band or this is vestigial. Specimens with a subapical orange band are form *ocale* (Boisd.).

The name for the dry-season form is *arethusa* (Drury). The ♂ with extended red, ♀ with reduced dark markings. This form is in a minority, but has received also the names *amytis* Godt., and *cebrene* Boisd.

A ♂ of the wet form in the British Museum from the Gold Coast is asymmetrical. The right side is slightly smaller.

Fore-wing with red subapical band mostly vestigial; hind-wing with complete marginal black border, the border on the left wing of similar width but of separate spots.

The various forms of ♀ occur in both seasonal forms and there is an extreme dry form of the white one in which the apical black is more reduced, with a well-marked ochreous-yellow band.

C. evippe epigone (Feld.) (= *microcale* Butl.).

The wet form of the ♂ differs from *e. evippe* in the larger red apical patch. The ♀ is of the *omphale* type without the heavy black markings, and in the dry-season form it closely resembles the ♂.

In the British Museum from the Sudan: Bahr-el-Gazal; Imatong Mtns.; Blue Nile Province; White Nile; Mongalla Province; W. Darfur; S. Abyssinia. Also a single ♂ of the dry season from the Haute Volta. A ♀ of the dry season from Darfur resembles the white ochreous-banded ♀ of the nominotypical form from Senegal.

C. evippe complexivus (Butl.).

The race from Uganda and west Kenya. The name applies to the wet-season form. Intermediate between the western *evippe* and the more eastern *omphale* form.

Hind-wing upperside with a black costal spot, frequently united with a costal stripe; usually a black post-discal band, rarely heavily marked.

♀ variable in the wet form. It may resemble *epigone* ♀ or be as dark as *omphale* ♀.

The type specimen, representing the dry form *pyrrhopterus* (Butl.), and the type of *complexivus* Butl., are males with a black inner stripe on the fore-wing. This form appears to be infrequent in the subspecies, and is connected to the entirely white fore-wing by transitions.

The type of *complexivus* was taken by Mr. Thrupp in Somaliland, probably far to the south. In the British Museum from: Ruhindi Plains, south of Lake Edward (2 ♂♂); Uganda (all parts); Kenya (western slopes and north to north-east of Mt. Kenia; Masai Dist., Kikuyu, Voi). A ♀ from Kigonsera, resembling the white ochreous-banded form referred to under the two preceding races.

The species must be scarce in Somaliland as the only one from there in the British Museum is the type of *complexivus*.

C. evippe omphale (Godt.).

This ranges from Kenya to S. Africa. The ♂ of the wet season is heavily banded and not so variable as the ♀. The wet ♀ may be lemon-yellow, and the dark markings above are sometimes very extensive; the orange subapical band tends to be wider in specimens from the south.

Dry-season form *theogone* (Boisd.).

Type ♂ in British Museum (ex Coll. Oberthür). Resembles *pyrrhopterus* (Butl.), but the black markings on fore-wing usually less extended. A ♂ in the

British Museum from Natal (bred, with pupa, ex Coll. Trimen) has the apical area on fore-wing bright orange-yellow instead of red. The ♀ *theogone* is like *pyrrhopterus* (Butl.), with white ground-colour and broad red band on fore-wing.

The ♂ form *omphaloides* (Butl.) has a black inner stripe on fore-wing.

Dry-form *hybridus* (Butl.) resembles the wet-season form on upperside in both sexes.

C. evippe omphale ♀ form **ochreata** form. n.

This type of form of the dry season seems to prevail in some places, as in Tanganyika Territory, Nyasaland, and among the Rhodesian subspecies, but does not seem to occur in the south.

Upperside pale ochreous-yellow, sometimes the hind-wing tinged with orange; subapical band orange-ochraceous. The post-discal band on hind-wing well developed.

Type labelled TANGANYIKA TERRITORY: Tendaguru, 24.vi.1924 (*W. E. Cutler*). A series from the same place, taken June to August.

The British Museum contains 5 ♂♂, 1 ♀ (ex Coll. Oberthür) from the COMORO ISLANDS: Grande Comore (*L. Humblot*), 1884, 4 ♂♂, Mayotte (*L. Humblot*), 1884, 1 ♂, 1 ♀. These belong to the dry-season form and appear to be exactly similar to specimens of ♂♀ from Portuguese E. Africa (ex Coll. Oberthür). It may be doubted whether those labelled " Comore " really came from there.

C. evippe mediata subsp. n.

Wet-season form: ♂. Differs from *omphale* in the hind-wing upperside having the post-discal band either absent or vestigial; outer marginal black border complete, wider, rarely dentate. ♀. Ground-colour white to creamy or pale sulphur-yellow. Black markings well developed; pale orange subapical band narrower than in *omphale*, or vestigial.

Dry-season form: ♂. Apparently not different from *omphale* f. *theogone*.

C. evippe mediata ♀ form **ochroleucus** form. n.

♀. Resembles the form *ochreata* which occurs amongst *omphale*. Differs from these in the narrower proximal black edging to the orange subapical band. Hind-wing with post-discal band usually incomplete, vestigial or absent. This ♀ is remarkably like some ♀♀ of *antevippe*, but these latter are distinguished by the prominent discocellular dot on the fore-wing.

♂ type of *mediata* from S. Congo: Elizabethville, 18.iv.1924 (*C. Seydel*). ♀ from Katanga: Busanga, junction of Lufupa and Lualaba Rivers, 3000 feet, 26.ii.1904 (*H. Cookson*). Both types are of the wet season.

♀ type of *ochroleucus* from S. Congo: Lumbumbashi, 17.vi.1928 (*C. Seydel*); 5 from Congo, 11 from Rhodesia, and 5 from Nyasaland.

The other material of this subspecies in the British Museum is as follows: *Wet-season form.*—15 ♂♂, 8 ♀♀ from Congo: 150–200 miles W. of Kambove, 3500–4500 feet, 29.x.1907 (*S. A. Neave*); Karnjinji River, 10° 7′ 45″ S., 3000 feet, 15.xii.1903 (*H. Cookson*); Lualaba River, 10° 5′ S., 3000 feet, 29.xii.1903 (*H. Cookson*); Lualaba River, 2500–4000 feet, 19.iv.1907 (*S. A. Neave*); Kambove, 4000–5000 feet, 2.iii.1907 (*S. A. Neave*); Katorupe, 1.xi.1929 (*C. Seydel*); id., 5.xi.1929; Elizabethville, 3.vi.1928 (*C. Seydel*); id., 18.iv.1924; Lubumbashi, 26.iii.1930 (*C. Seydel*); Kipushi, 18.iv.1932 (*C. Seydel*); Upper Kasai District (*P. Landbeck*), 3 ♂♂; also the ♀ allotype of *angolensis* Butl. from " Congo." S.E. Angola: Moxico District, 4000 feet, x.1928 (*T. A. Barns*), 1 ♂ very like f. *omphale*, 1 ♀ with pale yellow colouring. Rhodesia,

8 ♂♂, 2 ♀♀: Gibson, N. Rhodesia, 1908; N'Doia, N. Rhodesia, 19.i.1926 (*Maj. F. G. Jackson*); "Zambesi," 1 ♀; Mashonaland, Salisbury, 5000 feet, 10.v.1899 (*G. A. K. Marshall*); Karungu River, 10.ii.1917 (*T. A. Barns*), 1 ♀ pale sulphur-yellow with rather broad orange subapical band; id., 15.iii.1917, 1 ♂; Katonga River, ii.1917; Lake Mweru (*Johnston*) 1893, 2 ♂♂, each with a discocellular dot on fore-wing. Nyasaland, 5 ♂♂, 7 ♀♀: between Fort Mangoche and Chikala Boma, *c.* 4000 feet, 20–25.iii.1910 (*S. A. Neave*); S.E. shore of Lake Nyasa, between Fort Maguire and Fort Johnston, 6–17.iii.1910 (*S. A. Neave*); Lower Shire Valley, near Chikawa, 600 feet, 12–16.iv.1910 (*S. A. Neave*); S.W. shore of Lake Nyasa, between Fort Johnston and Monkey Bay, 1650 feet, 25.ii.–4.iii.1910 (*S. A. Neave*); Mpondas, 18.iv.1899; also others without detailed locality.

Dry-season form.—Congo, 16 ♂♂, 5 ♀♀: Ruindi River, S. end Lake Edward, 3500 feet, iii.–iv.1924 (*Mrs. E. Barns*); Lake Tshohoa, Ruanda District, viii.1919 (*T. A. Barns*); Lumbumbashi, v.1929 (*C. Seydel*); id., 10.vi.1926; id., 6.ix.1928; Uvira, 25.vii.1927 (*C. Seydel*); Katanga, 3000 feet (*H. Cookson*); between Luapula and Lualaba Rivers, 3000 feet, 20.viii.1903 (*H. Cookson*); Elizabethville, 23.iv.1930 (*C. Seydel*); Lufira River, 3500 feet, viii.1907 (*S. A. Neave*); Mutendale River, near Lualaba River, 3000 feet, 7.vi.1904 (*H. Cookson*); Katorupe, 9.vi.1933 (*C. Seydel*). Rhodesia, 14 ♂♂, 11 ♀♀: Salisbury, vi.1898 (*G. A. K. Marshall*); id., v.1898; N.E. Rhodesia, Upper Luangwa River, vii.–viii.1910 (*S. A. Neave*); Niamadzi River, near Nawalia, 2000 feet, viii.1910 (*S. A. Neave*); Fort Jameson, 3800 feet, vi.1910 (*S. A. Neave*); Lake Mweru; Mid-Luangwa Valley, 300–1800 feet, viii.1910 (*S. A. Neave*); Fort Jameson to Lundazi, 4000 feet, 7–14.v.1910 (*S. A. Neave*); Chambezi River, vii.1917; Abercorn, vii.1917. Nyasaland, 8 ♂♂, 5 ♀♀: Valley of S. Rukuru River, 3000 feet, vi.1910 (*S. A. Neave*); Valley of N. Rukuru River, Karonga District, 2000–4000 feet, vii.1910 (*S. A. Neave*); Mombera District, 4000 feet, 15–19.vi.1910 (*S. A. Neave*), ♀; Zomba, vii.1925 (*H. Barlow*), ♀.

C. evippe loandicus (Butl.).

The names *suffusus* Butl., *pseudocale* Butl., and *angolensis* Butl. will sink to this. Under *loandicus* are grouped specimens from Angola and the western Congo. These are very similar to those from Abyssinia and the Sudan (*epigone* Feld.), and the available material of both these subspecies is still too small to discover constant differences, especially in the ♂. The wet ♀ form of *loandicus* appears to have the inner stripe on fore-wing more strongly defined; in *epigone* this stripe is faint or absent. The dry form is also more marked on upperside, and has more basal black dusting. There are three pale yellow ♀♀ of the dry form in the British Museum from Landana, in the Portuguese Congo.

The types of *pseudocale* Butler are supposed to have come from the country between Natal and Delagoa Bay, in 1875. This seems most unlikely, as no similar specimens exist among the long series from S. Africa.

The types of *loandicus* belong to the dry season; they were in the collection of R. Meldola, and are not in the British Museum.

The wet-season form is *suffusus* (Butl.), founded on a rather darkened ♀.

C. evippe evanthe (Boisd.).

This form represents *evippe* in Madagascar, the upperside of both seasonal forms of ♂ having the appearance of *theogone* (Boisd.), whilst the ♀ is very like

the nominotypical one from west Africa, though, as in the ♂, without the black markings of the continental races.

The dry-season form is *ena* (Mab.). A ♂ specimen, with the apical patch pale orange, received the name of *lecithosoides* (Ob.).

There is a gynandromorph in the British Museum (ex Coll. Oberthür), and sent to Oberthür by Monsieur M. Lamberton in 1922, from south Madagascar. The left side is entirely ♂ and the right side entirely ♀; the genitalia appear to be also divided.

C. etrida etrida (Boisd.).

Baluchistan to Kutch, Central Provinces and Peninsular India.

The wet-season form *etrida* has the underside white, with yellowish flush over the apical and cell areas of fore-wing; markings few. It is subject to variation in the size of the orange apical patch and extent of apical black, and in the size of marginal spots on hind-wing, these being sometimes absent. The type of *purus* (Butl.) is a wet-season form.

The dry-season form will be *casimirus* Butl. (= *bimbura* Butl.). Hind-wing underside, and apical area of fore-wing more or less ochraceous, in the ♀ more strongly dusted with ochraceous-brown; the markings on the ♂ hind-wing resemble those of the ♀ wet form.

C. etrida limbata (Butl.).

Occasional specimens occur with the spotted hind-wing border of the nominotypical race.

C. daira daira (Klug).

The series in the British Museum from Arabia does not exhibit any obvious dry-season character, and such forms appear to be rather rare in other parts of the species' range. The type of *yerburii* represents an average specimen of *d. daira*. The name *swinhoei* (Butl.) is based on a large ♀ which is pale primrose.

C. daira stygia (Feld.).

This represents the subspecies ranging over Somaliland, Abyssinia, Sudan and Nigeria.

Distinguished by the heavier and more extended black markings in both seasonal forms, but especially by the ♀; this is usually yellow, rarely white, and bears on the fore-wing an apical black unspotted area; hind-wing with broad black border more or less interrupted by streaks of ground-colour. In the ♀ form *flavus* (Auriv.), the black markings are reduced, and on hind-wing limited to some marginal spots. In specimens of the dry season from Nigeria, the ♀ resembles the ♂.

The name *odysseus* (Swinh.) can be applied to a form without costal stripe on hind-wing, with reduced marginal markings on hind-wing, and vestigial posterior spot on fore-wing, ♀ white, the stripe on both wings vestigial, hind-wing with small marginal spots.

C. daira thruppi (Butl.).

This subspecies ranges from Somaliland to Uganda and W. Kenya. It has 4 forms of ♀. The form *thruppi* resembles the ♂; form *flavidus* (Auriv.) yellow, scarcely distinguishable from *stygia* ♀. A third form resembles the ♂ but the white areas are yellow; for this form the name **arusa** form. n. is proposed. Type from Arusa Galla country (*Gillett*), 21.xi.1894; no others, but most frequent in Kenya, from whence there are 6 specimens. A fourth form resembles *flavidus*, but is white or only tinged with yellow. This can be called

form **canescens** form. n. Type from Somaliland: Hargeisa, 4300 feet, v.1929 (*H. Portal Hyatt*); also one from Oge, Somaliland, 5000 feet, 25.v.1919 (*J. P. S. Clarke*). A third among the *stygia* from N. Nigeria.

C. daira jacksoni (Shpe.).

A slightly differentiated race with heavier and more extended black markings than *thruppi*. In both sexes the inner stripe on the fore-wing has a distal spur which reaches the black apical area; marginal border on fore-wing extended nearer to the tornus than in *thruppi*. Hind-wing with edge of black marginal border more sharply defined and not greyish posteriorly as in *thruppi*. The ♀ exists in the forms *jacksoni*, *flavidus*, and *arusa*.

In the British Museum a series of both sexes from Kenya, chiefly the coastal districts. There is a ♂ from Nairobi, and one from the Imatong Mtns., S. Sudan.

C. pallene (Hopff.).

A rare and peculiar species that has apparently three races over an area extending from Uganda to the Cape and South-West Africa.

Specimens of *p. pallene* may be confused with *anterippe* and *evippe*. The former is distinguished by the blackened veins, more or less, on the hind-wing underside, and the ♀ with two rows of orange markings. The latter has usually no discocellular dot on fore-wing upperside except when the underside bears no inner stripe. In *pallene*, however, the discocellular dot is rarely absent and is prominent in the ♀, and at the same time the fore-wing bears a more or less distinct inner stripe on the underside. The ♀ of *pallene* seems very rare; it is very similar to forms of *antigone* (Boisd.), and is described hereafter.

C. pallene pallene (Hopff.).

Uganda to Tanganyika Territory, Nyasaland and S.E. Africa. The figure given in Peters' (1862) *Reise* is much like *halyattes* Butl., but on the fore-wing the black inner stripe is more accentuated at its distal end; hind-wing with a black costal stripe, and marginal spots connected on the margin. Underside of hind-wing white. This represents the wet-season form. The type came from Mozambique; the British Museum has no specimen from there, nor any of typical *pallene*. The ♂ of the wet season has two forms as follows:

The name *cinctus* (Butl.) applies to a form from Uganda in which the ♂ has a narrow border on the hind-wing, with well-defined edge; fore-wing inner stripe with distal end upcurved; orange-red apical area large.

The name *infumatus* (Butl.) applies to a dark form which occurs in Uganda, Tanganyika Territory and Nyasaland. All dark markings widened, the orange-red patch smaller.

There is a ♂ in the British Museum labelled "Delagoa Bay" (ex Coll. Crowley).

The ♀ of this species is very difficult to separate from *antigone* ♀. A number of specimens previously placed provisionally with *pallene* were found to agree with larger numbers placed in the series of *antigone* from the same localities. As the latter is a common species the majority of ♀♀ of this type should be of this species. One character was found to be possessed by the wet-season ♂ and ♀ in common. This is the colour of the subapical band on the fore-wing underside. In *pallene* it is pale orange or yellowish; in *antigone* it is distinctly orange. According to this, the ♀ placed by Butler with his ♂ *infumatus*, belongs to *antigone*. Three ♀♀ are placed as belonging to *infumatus* or *cinctus*.

Fore-wing with well-developed inner stripe; subapical band vestigial or composed of small orange spots. Hind-wing with a marginal border bearing a submarginal row of spots of the white ground-colour, interrupted in area 5.

One specimen from S.W. shore of L. Nyasa, between Fort Johnston and Monkey Bay, 1630 feet, 25.ii.–4.iii.1910 (*S. A. Neave*); one from Mpondas, Nyasaland, 18.iv.1899 (*E. M. de Jersey*); one from Tanganyika Territory, District of Great Craters, ii.–iii.1921 (*T. A. Barns*). Two other ♀♀ probably belong here. They are very much darker with wider borders, indistinct orange subapical streaks, and yellowish-white ground-colour. Both labelled Transvaal (ex Coll. Hewitson).

Another wet-season form of this species in the British Museum is comprised in 2 ♂♂, 3 ♀♀ from N. Rhodesia, and 1 ♂ from Transvaal. These are lighter than *infumatus*.

The dark marginal border on the fore-wing stops at vein 2 and only reaches the tornus as a fine marginal line or by a few scattered scales. The marginal border of the hind-wing is formed of small spots which are either free or only connected at the marginal edge.

The ♀ differs from *infumatus* ♀ in the prominent orange subapical band, the marginal band posteriorly as in the ♂, the hind-wing marginal border narrow or formed of separate spots; black discocellular spot on both sides of fore-wing, rounded and prominent.

This form is *seineri* (Strand). The type came from Kasungula, and others from Livingstone. The British Museum specimens are from Kalomo, which is not far away. The Transvaal ♂, from Enzelberg, Marico District, has small marginal spots on the hind-wing.

The name for the dry-season form is *meinickei* (Le Doux) from Tanganyika Territory. This closely resembles specimens of the subspecies *halyattes*. The upperside is either without an inner stripe on fore-wing or this is vestigial.

Two small ♀♀ are associated with this in the British Museum, both from N.E. Rhodesia. These, like the ♀♀ placed with *infumatus*, are so placed provisionally; with dry-season specimens it is even more difficult to separate *pallene* ♀ from *antigone* ♀.

The Rhodesia ♀ is chalky-white on upperside, with reduced apical black bearing, in one case, indistinct orange spots, in the other case, larger orange spots; a dark posterior post-discal dot.

Hind-wing with small and weakly marked marginal spots; a small diffuse and indistinct post-discal spot in area 4. Underside of hind-wing and apical area of fore-wing pinkish-brown, the dark post-discal spot more accentuated.

An extreme dry-season form is *simplicioides* (Le Doux), type from Unyika, north of Lake Nyasa. This appears to differ chiefly in the black edging to the orange apical patch being vestigial.

The name *pallida* (Le Doux) is applied to a ♀ of the dry season. Yellowish-white, with reduced dark markings, fore-wing with yellowish subapical streaks. One in the British Museum from Tanganyika Territory, Athi River.

The total of specimens of *p. pallene* in the British Museum is 16 ♂♂, 12 ♀♀, covering the area from Uganda to Delagoa Bay. This material is, perhaps, not enough from which to infer that it comprises a single and very variable subspecies.

C. pallene halyattes (Butl.).

Confined chiefly to Natal and extending as far as Delagoa Bay. Appears to be very rare. The series of 8 ♂♂, 7 ♀♀ in the British Museum belong to the dry-

season form. The ♀ is difficult to separate from *antigone* forms, but the apical area of fore-wing below is more ochreous and less reddish-brown than in *antigone*.

In the British Museum. From between Natal and Delagoa Bay, 6 ♂♂, 6 ♀♀ (types); N.E. Transvaal, 1 ♂ (ex Coll. Trimen); "S. Africa," 1 ♂ (ex Coll. Crowley); "Natal," 1 ♀ (ex Coll. Ward).

C. pallene lais (Butl.).

Confined chiefly to the area between Transvaal and Cape and south-west Africa. Distinguished from *halyattes* by the orange apical patch not forming a prominent spot in area 3, only a very small spot or a few orange scales in this area. The apical patch is of a more ochreous or duller orange than the more reddish patch of *halyattes*.

There are two specimens of the wet-season ♀ in the British Museum. One is hardly different from f. *pallida* (Le Doux). The other is white and has small reddish subapical spots.

The dry-season form is *achinoides* (Le Doux), in which the fore-wing has an inner black stripe, and the hind-wing a costal stripe. The type came from British Bechuanaland, and is not represented in the British Museum. Instead there are 3 ♂♂, 2 ♀♀ of a more normal dry form which, on upperside, does not differ from the ♂, except that at most the hind-wing may bear a few marginal dots. Similarly, the ♀, on the upperside, resembles the wet-season ♀.

The material of this subspecies in the British Museum is as follows: *Wet-season form.*—Vaal River (ex Coll. Trimen), 2 ♂♂, 1 ♀; Vaal River, Griqualand West (ex Coll. Trimen), 2 ♂♂; Kimberley, Stone Street, 1 ♂; "South Africa," ? between Transvaal and Orange River, ♂ type; "South Africa" (ex Coll. Adams), 1 ♂; "Diamond Fields" (ex Coll. Grose-Smith), 1 ♂; British Bechuanaland (ex Coll. Trimen), 1 ♂; south-west Africa, Okahandja, 18–19.i.1928 (*R. E. Turner*), 2 ♂♂; id., 1–12.i.1928 (*R. E. Turner*), 1 ♀. *Dry-season form.*—Vaal River (ex Coll. Trimen), 2 ♂♂, 1 ♀; Vaal River, Griqualand West (ex Coll. Trimen), 1 ♀; "South Africa" (ex Coll. Crowley), 1 ♂.

The ♂ from Kimberley is unusually large with a fore-wing of 22 mm. The part of the orange patch lying in area 3 is larger than in other specimens. The smallest specimen is a ♂ from Okahandja, the fore-wing length being 14 mm.

C. ephyia (Klug).

Also a rare species, the ♀ particularly so. The British Museum contains 17 ♂♂, 1 ♀ from the Egyptian Sudan, the Blue Nile area, and the Bahr-el-Ghazal.

The single ♀ does not differ much from the ♂, a very unusual circumstance in *Colotis*. It is larger than the ♂, with a distinctly more rounded fore-wing; the black marginal border on both wings is heavier. The length of fore-wing is 20 mm. The specimen was taken at Tayiba, Blue Nile, 24.ix.1923.

C. rogersi (Dixey).

This species is much scarcer than any others in this group, and only 2 ♂♂, 1 ♀ are in the British Museum. It is apparently distributed over the Kenya coastal area, extending to central Tanganyika Territory.

♂. Upperside much resembles *halyattes*. Fore-wing black at base below cell, but never with black scaling along inner margin. Hind-wing with marginal border more heavily

marked, and with a small submarginal spot or dot in area 4, present in the wet form. *Underside* of fore-wing with apical area divided into an outer ochreous and an inner pale orange band by a series of four minute dusky spots, elongated in a direction parallel with the veins; the veins crossing the apical area are blackened in the wet form. Hind-wing, in the wet form, white with yellow marginal suffusion, in the dry form reddish-ochreous; a submarginal row of six dusky or yellowish spots in areas 2–7, the one in area 5 vestigial or smaller than the others, and the one in 7 larger than the others; veins blackened in the wet form.

♀. Upperside similar to some forms of *antevippe* and *antigone*, but easily distinguished by the pattern on apical area of fore-wing. This area is black and bears two rows of orange-red spots, the proximal row of four spots, in areas 4, 5, 6 and 8, edged with black on the inside, and so distinguishing this ♀ from similar forms; a dusky or black inner stripe. Hind-wing with a submarginal row of black spots; in the wet-season form these spots, except for the anterior two, are merged with the heavy black outer border; in the dry form these spots are free from the border, and the border is anteriorly narrow and posteriorly represented by marginal spots on veins 2, 3 and 4; costal area black in the wet form, and united with the anterior submarginal spot. *Underside* of fore-wing with subapical spots much larger than in the ♂, black. Hind-wing submarginal spots also larger than in the

The original description was based on 1 ♂, 3 ♀♀ of the dry-season form from Taveta; these are in the Hope Dept. at Oxford University Museum.

The British Museum contains four specimens; these are from the following places: Kenya, near Nyeri, 18.i.1912 (*F. C. Selous*) (ex Coll. Trimen), 1 ♂ (wet form); Taveta, 24.ix. (*A. H. Neumann*), 1 ♀ (dry form); Lake Chale, 13.viii. (*A. H. Neumann*), 1 ♀ (dry form); south Sudan, "Njam-Njam (Ribbe) (ex Coll. Schmidt)," locality seems doubtful, 1 ♂ (wet form).

Besides the original specimens mentioned above, the following material of 13 ♂♂, 5 ♀♀ in the Hope Dept. at Oxford was very kindly made available by Professor G. D. H. Carpenter for my examination: Kenya: Sagalla Mtn., *c.* 3500 feet, about 100 miles W.N.W. of Mombasa, 9.viii.1915 (*K. St. A. Rogers*), 1 ♀ (dry form); id., 9.ix.1915 (*K. St. A. Rogers*), 1 ♂ (dry form). Tanganyika Territory: Kiboriani, *c.* 6000 feet, near Mpapua, near railway about 200 miles west of Dar-es-Salaam, 1918 (*K. St. A. Rogers*): 12.i., 1 ♂; 15.ii., 1 ♂; 7.iii., 1 ♂; 22.iii., 3 ♂♂, 1 ♀; 23.iii., 3 ♂♂, 2 ♀♀; all wet-season specimens. Kongwa Hill, about 210 miles west of Dar-es-Salaam, *c.* 4500 feet, 1917, dry-season form (*K. St. A. Rogers*), 1.ix., 1 ♂; 12.ix., 1 ♂, 1 ♀. Kitangi Hill, about 14 miles west of Mamboya, *c.* 3500–4000 feet, 23.ii.1917 (*K. St. A. Rogers*), 1 ♂ (wet form).

agoye group.

♂. Upperside of fore-wing with ochraceous-brown apical area not reaching below vein 3, and edged with black proximally, except in occasional very dry forms; apex more acute and outer margin more oblique than in the preceding groups. Hind-wing without marginal spots or bands. Underside without markings.

♀. Upperside of fore-wing with a broad black apical area which bears a band of two or three ochraceous bars in areas 4–6; in wet forms these subapical spots may be very small, or in dry forms they may be merged in an entirely reddish-ochraceous apical area. *Underside* as in the ♂, but the hind-wing and apical area of fore-wing in dry-season forms more pinkish-brown or ochraceous.

Only one species is assigned to this group.

C. agoye zephyrus (Marsh.).

Somaliland. Apparently very rare. The British Museum contains 3 ♂♂ of the wet-season form, and 2 ♂♂, 3 ♀♀ of the dry-season form. The latter form is without the inner black edging to the apical area, and the fore-wing has a yellow tinge, especially in the ♀. The type belongs to the wet season.

C. agoye agoye (Wllgr.).

South Africa, north of the 26th parallel; apparently not found in Natal.

Distinguished by the veins on the upperside being black. ♀ with a distinct discocellular spot on both wings, not found in the other races, and this is present at least on the underside. Fore-wing with inner edge of the subapical area bent inwards at vein 5. Hind-wing without distinct spots in areas 5–7.

C. agoye bowkeri (Trim.).

South Africa, south of the 26th parallel. The British Museum contains a specimen from North Bechuanaland (Ganzi), and also one of *agoye agoye* from Bechuanaland (Kama's country). If there is only one species these places should be within the border area of the two forms.

The ♀ is distinguished from that of *agoye*, which it closely resembles, by the absence of the discocellular spots, by the inner edge of the apical area being bent inwards at vein 4, and by the hind-wing bearing two or three small spots in areas 5–7. The dry-season ♀ has the apical area reddish-brown, and the marks on the hind-wing are sometimes absent.

liagore group.

The single species placed in this group is distinguished from all others with similar pattern by the orange apical area of fore-wing reaching vein 2; inner edge of this area entirely without black scaling. Both wings without a discocellular dot. Hind-wing with small black marginal spots, but no other markings. *Underside* without markings except a narrow orange subapical band on fore-wing. Sexes similar.

C. liagore (Klug).

The wet-season form is *liagoroides* (Roths.).

Fore-wing with costa black to base; outer marginal black line much heavier. Hind-wing with a black marginal line connecting the marginal spots. ♀ with heavier dark markings, the fore-wing with dark apical band and greyish proximal scaling.

The ♀ seems very scarce, as the British Museum contains only two specimens, and these belong to the dry-season form; there are 19 ♂♂ of this form, and 4 ♂♂ of *liagoroides*. One of the latter was taken at Pasni in south Baluchistan, 9.iv.1935 (*K. R. K.*), and presented by the Imperial Institute of Entomology. This constitutes a new record for the Indian fauna.

The form *castina* Le Cerf, described as belonging to *liagore*, is considered to be a specimen of *evenina casta* (Gerst.) (*q.v.*).

evanthides group.

A single species of doubtful affinity, perhaps with *antigone* or perhaps with *eucharis*.

♂. Resembles the preceding group in that the orange area reaches vein 2, but this area is edged with black all round, except for a space opposite the end of the cell; a small black discocellular dot. Hind-wing with marginal black vein-dots. *Underside* of fore-wing with apical area pale ochraceous-yellow, more or less dusted with black; a distinct discocellular dot. Hind-wing pale ochraceous-yellow, more or less dusted with black; a black discocellular dot, edged with pale orange anteriorly; marginal vein-dots as on upperside.

♀. Somewhat resembles the ♀ of *antigone*. Fore-wing upperside with a similarly curved row of black spots, proximally of which the orange area extends but little; this row curves outwards in area 3 and thence edges the orange to the margin at vein 2; a prominent black discocellular dot, a small black post-discal spot below vein 2, and a dot above it in area 2. Hind-wing and underside as in ♂.

C. evanthides (Holl.).

Confined to the Comoro and Seychelles Islands. The British Museum contains a series of both sexes, from Aldabra, Assumption and Mayotte, chiefly from Aldabra.

antigone group.

This group comprises a single widely distributed and very variable African species.

♂. Upperside of fore-wing with orange apical area reaching veins 3 or 4, without a vestige of black proximal scaling, but often a black spot present in area 3 near the outer edge of the orange area; orange area on outer edge sharply toothed between the veins; a small black discocellular dot, not usually present; a black inner stripe or spot or vestiges of such often present. Hind-wing with usually some marginal spots, but a costal stripe and wide marginal border may be present. *Underside* of fore-wing usually with a subapical orange band and black discocellular dot, sometimes with black posterior spot or inner stripe. Hind-wing with a black discocellular dot, edged with orange on the inside; otherwise unmarked or with more or less defined post-discal band, or vestiges of such.

♀. Extremely variable. Upperside may resemble the ♂, but fore-wing usually with a black discocellular spot. The apical orange area, when present, divided by a heavy black line angled at vein 5; the inner part of this orange area often absent, whilst the outer part is reduced to a thin streak or is also absent. Most specimens have an inner black stripe on fore-wing, and a similar costal stripe on hind-wing. Hind-wing with no discocellular dot on upperside; outer dark border as variable as in the ♂, and sometimes the whole wing is darkened. *Underside* resembles the ♂, but more yellow (wet form) or ochreous (dry form).

C. antigone evagore (Klug).

This represents *nouna* in Arabia, and *nouna* represents *antigone* in the north.

C. antigone biskrensis (Blach.).

Extends over Algeria as far as Oran in the west. A number of names have been given to insignificant individual variations in this race and in *nouna*, and it is easy to visualise how fantastic such procedure would be if applied to all the tropical *Colotis*. The British Museum contains a large series, chiefly from the Oberthür Collection.

C. antigone nouna (Luc.).

Extends over Morocco to west Algeria. The nominotypical *nouna* belongs to the wet season, with an inner stripe on the fore-wing, and a costal stripe on hind-wing. The dark form *turatii* (Stdr.) is probably a wet-season form. If

so, the name for the dry-season form is *lefevrei* (Ob.). This is based on a ♀ with much reduced black markings, and with prominent orange subapical band.

The British Museum material of this is very poor: 11 ♂♂, 13 ♀♀.

C. antigone antigone (Boisd.).

Occurs everywhere south of the Sahara where other *Colotis* spp. are found.

The nominotypical form, of which the type ♂ is in the British Museum, has a wide (about 1·5 mm.) marginal black border on both wings. Fore-wing with an inner basal stripe which only extends to about half the inner margin. Hind-wing with a black costal border; outer marginal border intersected by white vein-streaks. This represents a wet form between the two extremes of wet forms, and is unusual as no other quite similar specimen exists in the British Museum. It can be placed with other intermediate wet specimens that bear a fully developed inner stripe on the fore-wing.

The name *phlegetonia* (Boisd.), of which the type ♂ is in the British Museum, applies to a lightly marked form of the wet season.

Fore-wing with narrow black outer border, and a narrow inner stripe not always well marked. Hind-wing with small marginal spots.

The following are synonyms of *phlegetonia*: forms *coniger* Butl., *glycera* Butl., *friga* Butl., *xanthus* Swinh., *minans* Butl., *comptus* Butl., *bifasciatus* Butl.

The name *eione* (Boisd.), of which the ♀ holotype is in the British Museum, applies to a dark form with strongly marked inner and costal stripes, with wide outer border on hind-wing; the black marginal border of fore-wing does not reach the tornus except as a vein-spot.

Another form of ♀ is without orange markings, only with short subapical streaks, and the dark borders are wider than in *eione*. As this form appears to be without a name, **C. antigone antigone** form **contrasta** form. n. is proposed. Holotype labelled SUDAN: Mongalla, 27.iv.1924 (*F. Moysey*). A series from the Sudan, also specimens from Uganda.

The name *jamesi* (Butl.) applies to a ♀ form in Somaliland and Kenya, and is associated with the ♂ form *heuglini* (Feld.). It resembles *eione*, but the black markings are reduced, especially on the hind-wing, which has a submarginal narrow band, sometimes indistinct, and a marginal row of spots.

Another wet-season ♀ form occurs in Uganda.

Much whiter than *contrasta*, with reduced black markings. Fore-wing inner stripe vestigial or narrow. Hind-wing costal stripe weakly marked; a marginal row of spots, and neither submarginal nor discal markings. The name **C. antigone antigone** form **decolor** form. n. is proposed for this.

Type from banks of Nile near Kakindu, 3400 feet, 24–25.viii.1911 (*S. A. Neave*). Also from Toro, S.E. Ankole, Semliki Plains.

Another ♀ form is represented by a single specimen from Omdurman, 12.x.1902 (*H. N. Dunn*). This approaches the ♀ allotype of *glycera* Butl. (= *phlegetonia*).

Fore-wing differs in complete absence of inner stripe; the ochraceous apical area with only an indistinct dusky line. Hind-wing with small marginal spots, no costal stripe, a small anterior post-discal spot. The name **C. antigone antigone** form **desertorum** form. n. is proposed.

Farther south in Tanganyika Territory the extreme wet form *emini* (Butl.) begins to appear.

This is much darker than *eione*. Fore-wing with the black marginal border reaching the tornus; inner stripe broad; on the orange area the black spot on vein 4 reaches the inner edge of the orange and usually also extends to vein 5. Hind-wing outer border very wide. The normal ♀ of this form is very dark, with more or less distinct orange streaks in the apical area.

C. antigone antigone form **luvua** form. n.

Another wet form of ♀ occurs, represented in the British Museum by two specimens from the south-east Congo.

Wings strongly rounded. Upperside ground-colour ochreous-yellow in the type, white in the other. Fore-wing with rather wide outer border and inner stripe; edge of the outer border fairly even, without the projection on vein 3 which is characteristic of most *antigone* ♀♀; a row of five sharply defined and prominent submarginal orange-red spots in areas 3, 4, 5, 6 and 8. Hind-wing with wide immaculate outer border, its edge about half-way between end of cell and the margin; this border is continuous with the black costal stripe. *Underside* ochreous-yellow. Fore-wing with black subapical line reaching vein 3, heavily marked between veins 3 and 5, becoming diffuse and indistinct anteriorly; marginal area up to the dark line orange-yellow or orange down to vein 2, and not with an orange-red subapical band as in other ♀♀ of the species; tornal area pale yellowish-white; prominent inner brownish-black stripe, becoming diffused into area 2; the veins, excepting vein 1, are blackened distally. Hind-wing with dark diffuse post-discal line (reddish-brown and heavier in the paratype) which runs nearly parallel to the margin and is not angled outwards as in most *antigone*; between the post-discal line and the margin the veins are finely blackened. The black discocellular dots on fore-wing and on underside of hind-wing are as in other ♀♀. Length of fore-wing: Type, 17 mm.; paratype, 20 mm.

Type labelled: Luvua River (east bank), 85 miles north of Lake Mweru, *c.* 3000 feet, iv.1922, end of wet season (*T. A. Barns*). Paratype labelled: Kilingi, iv.1923 (*C. Seydel*).

The name *luvua* is proposed for this rather distinct form. It is placed provisionally with *antigone*, but may possibly belong to *pallene*, or represent a new species.

The oldest name for the dry-season form is *delphine* (Boisd.). The type in the British Museum (ex Coll. Oberthür) is a ♀. It closely resembles males from the same area and elsewhere, but the fore-wing bears the discocellular dot present in nearly all ♀♀. There is a similar ♀ in the British Museum from Tabora, Tanganyika Territory, but this specimen, curiously, is without the discocellular dot. There is not a ♀ in the British Museum from S. Africa that resembles *delphine*, but those from Nigeria and Senegal are very like it.

The name *delphine* can be applied to all the dry-season males from N. Nigeria, Haute Volta, Gambia, Senegal to Sudan, Abyssinia and Somaliland. Such males resemble *nouna*. The orange area usually without a dark spot or dot, its inner edge usually slightly incurved in areas 3 and 4. Hind-wing with marginal spots usually prominent but sometimes absent. Appears to represent the form described by Felder as *demagore*.

Specimens like the males described above, but with underside markings of the wet season, white or yellowish, belong to the wet-season form *heuglini* (Feld.), described in the ♂ only, from Somaliland. The ♀ usually associated with these is the form *jamesi* (Butl.). Similar ♀♀, only differing on the underside, are found with *delphine* ♂♂ in the Haute Volta.

The name *gelasinus* Butl. was founded on a ♂ with the dark markings a little more prominent than in *heuglini*.

Associated with *delphine*, in some parts of the eastern Congo and Rhodesia, are two other dry-season ♀ forms.

C. antigone antigone form **bianca** form. n.

For the first one the name *bianca* is proposed.

Upperside chalky-white. Fore-wing outer border of relatively moderate width, bearing short and linear streaks which are white or reddish; inner margin rarely with a narrow stripe; discocellular dot minute. Hind-wing rarely with a vestigial post-discal line; marginal spots prominent, either connected or separated by the veins; costa usually darkened, but rarely with prominent stripe.

Type labelled: Ruindi River, south end of Lake Edward, 3500 feet, iii.–iv.1924 (*Mrs. Barns*); also two others with the same data. Rutchuru, lava plain beneath Birunga Volcanos, 5000 feet, iii.–iv.1924 (*Mrs. Barns*), 1; Plains south of Lake Edward, viii.1925 (*Mrs. Barns*), 3.

C. antigone antigone form **wa** form. n.

For the second form from Rhodesia the name *wa* is proposed.

Upperside milky to creamy and yellowish-white. Fore-wing outer border as in the first form, but the submarginal streaks are usually much larger, and ochreous-yellow to pale orange-red. Hind-wing with costa not darkened; marginal spots large, but posteriorly reduced or absent. *Underside* of fore-wing with apical area either pinkish-brown or yellowish with brownish-red subapical band (type), or entirely dull red with indistinct dark band. In one specimen the apical area is pale ochreous dusted black, and the subapical band consists of four blackish spots.

Type labelled: N.E. Rhodesia, Upper Luangwa River, 27.vii.–13.viii.1910 (*S. A. Neave*). Also from Luwumbu Valley, Upper Luangwa, 2500 to 3500 feet, 19–26.vii.1910 (*S. A. Neave*), 2; Road between Fort Jameson and Lundazi, 4000 feet, 7–14.vi.1910 (*S. A. Neave*), 1; Niamadzi River, near Nawalia, 17–22.viii.1910, 2000 feet (*S. A. Neave*), 1; Upper Luangwa River, 27.vii.–13.viii.1910 (*S. A. Neave*), 1♀; Umtali, viii.1908 (*M. Fountaine*), 1; Fort Jameson (*J. M. Phipps*), 1.

C. antigone antigone form **xanthotes** form. n.

A third ♀ form of the dry season in South Africa takes the place of form *contrasta*. It is represented by Butler's types of the ♀ of his *flaminia* and *lyaeus*, and is also the form described by Westwood as the ♀ of his *pseudetrida*.

Ground-colour of upperside creamy white more or less tinged with yellow. This only differs from the Rhodesia specimens of form *wa* in a slight increase of dark markings on the inner margin of fore-wing and post-discal and costal areas of hind-wing, all transitions occurring between *wa* and a strongly marked form like ♀ *phlegetonia*, represented by Butler's allotype of *galathinus*, with yellow instead of orange markings. As this form occurs in S. Africa to the exclusion of typical *wa*, it seems advisable to denote it. The name *xanthotes* is proposed.

Type from district between Delagoa Bay and Natal. This specimen distinctly yellowish, dark markings weak. A variable series from Natal and S.E. Africa; also one specimen from the Katanga, 3000 feet (*H. Cookson*).

A fourth ♀ form of the dry season is represented by *pseudetrida* (Westwood). This has an orange subapical band on the fore-wing, but otherwise resembles *xanthotes*. I am indebted to Professor G. D. H. Carpenter for kindly enabling me to examine the type and two others which Westwood had before him. The type is a ♀ from Matabeleland, representing an extreme dry form in which there is no trace of the orange subapical band on the fore-wing underside; specimens in which this band is present have usually on the upperside an inner short orange band or a vestige of such, and represented by the specimen described by Butler as the ♀ of his *subfumosus*. There are eight specimens of form *pseudetrida* in the British Museum.

A ♂ dry-season form is represented by *galathinus* (Butl.). This occurs at Delagoa Bay and in Natal.

Upperside with black markings well developed and very similar to *phlegetonia* (Boisd.). Fore-wing always with an inner stripe, and hind-wing with black costal stripe more or less developed. Underside with the usual dry-season coloration.

According to specimens in the British Museum collection, the forms of *antigone antigone* that occur in the various areas are as follow. The word " type " denotes that the holotype came from this area :

1. N. Nigeria to Senegal and Sudan.—Form *antigone* (type), f. *heuglini*, f. *phlegetonia* (type), f. *eione* (type), f. *delphine*, ♀ f. *jamesi*, ♀ f. *contrasta* (type), ♀ f. *desertorum* (type).
2. Abyssinia.—Form *eione*, ♀ f. *contrasta*.
3. Somaliland.—Form *delphine*, f. *heuglini* (type), ♀ f. *jamesi* (type).
4. Uganda and Kenya.—Form *phlegetonia*, f. *heuglini*, f. *delphine*, ♀ f. *leucoma* (type), ♀ f. *contrasta*, f. *emini* (Kenya only), ♀ f. *decolor* (type).
5. Tanganyika Territory.—Form *emini* (type), f. *phlegetonia*, f. *delphine*, ♀ f. *contrasta*.
6. Nyasaland.—Form *emini*.
7. Congo.—Form *phlegetonia*, f. *emini*, f. *delphine*, ♀ f. *bianca* (type), ♀ f. *luvua* (type).
8. Rhodesia.—Form *emini*, f. *phlegetonia*, f. *delphine*, ♀ f. *wa* (type), ♀ f. *pseudetrida* (type).
9. Angola, S.W. Africa.—Form *antigone*, f. *emini*, f. *heuglini*.
10. South Africa.—Form *emini*, f. *phlegetonia*, f. *delphine* (type), ♀ f. *pseudetrida* (Transvaal).
11. Natal and S.E. Africa.—Form *emini*, f. *phlegetonia*, f. *delphine*, f. *galanthus* (type), ♀ f. *xanthotes* (type), ♀ f. *pseudetrida*.

C. antigone niveus (Butl.).

The general pattern of this form, especially of the ♀, is very similar to that of *antigone*, and there seems little reason for considering *niveus* to be a distinct species. The name *candidus* (Butl.) applies to the dry-season form. The ♀ of this subspecies is known only in one form.

mananhari group.

In this group is placed a single large species, known only from Madagascar.

♂. Upperside of fore-wing yellow, with black apical and marginal area that usually ends in a point at or just before vein 2, on its inner edge slightly toothed at the veins; a prominent rounded black discocellular spot. Hind-wing yellow with white costal area and no mark-

ings. *Underside* of fore-wing yellowish-white, with discocellular spot, and with or without a submarginal black line usually represented by a costal spot. Hind-wing paler yellow than on upperside, either unmarked, or with a black post-discal transverse band and longitudinal middle stripe.

♀. Upperside white or yellowish-white. Fore-wing with outer border wider than in the ♂, and reaching the tornus; discocellular spot more prominent. Hind-wing with wide outer black border. *Underside* of fore-wing as above, but with yellowish apical area. Hind-wing as in ♂.

C. mananhari (Ward).

The types (♂♀) are in the British Museum (ex Coll. Oberthür). The nominotypical form belongs to the wet season. Another wet form is *nothus* (Mab.), which has a prominent black longitudinal streak on the hind-wing underside. The dry-season form is *flavida* (Mab.).

The form *nothus* was not figured by Mabille in his work on Madagascan Lepidoptera, as plate 36*a* was never published.

eris group.

This group comprises a single African species of wide distribution.

♂. Upperside with white ground-colour. Fore-wing with wide black outer border that approaches the cell at vein 4 and continues to the base of wing; apical area washed with coffee-brown, and bearing four or five dull ochraceous spots, a single white spot usually present in area 3 on the edge of the apical area; no discocellular spot. Hind-wing with black costal area that usually reaches the cell and vein 6; outer marginal black spots not always present. *Underside* of fore-wing with three black post-discal spots in 1b, 2 and 3; no discocellular spot. Hind-wing costa edged with orange, and sometimes an orange streak in area 1c.

♀. Upperside somewhat as in the ♂, but the black areas reduced; ground-colour white or yellow. Fore-wing outer border black to coffee-brown, bearing light submarginal spots, the white spot in 3 prominent; black inner stripe not always present, but the discocellular spot prominent. Hind-wing with rounded marginal vein-spots in the wet form, these small or absent in the dry form. Underside of fore-wing as in ♂. Hind-wing with a black discocellular dot, and usually a curved post-discal row of small black spots, often indistinct.

C. eris eris (Klug).

The ♀ of the wet-season nominotypical form is white. Fore-wing with wide black outer border continued along inner margin to base, leaving a tornal spot of ground-colour. Hind-wing with prominent marginal black spots, more or less separated by the veins, rounded or triangular. In specimens from Uganda, Kenya, and Tanganyika Territory the black markings are reduced on both wings. Females with yellow coloration are form *abyssinicus* (Butl.). A third form of wet-season ♀ is *opalescens* (Butl.) with chalky-white ground-colour, the fore-wing in the type with a pearly gloss. Males which bear a black discocellular spot on the fore-wing are f. *erioides* (Strand); the name was founded upon wet-season specimens from Abyssinia, but dry-season specimens of the form also occur.

The dry-season form is *fatma* (Feld.). Specimens of the ♀ occur in which the black markings on upperside of fore-wing are almost as well developed as in specimens of the wet-season form.

C. eris eris form **chlorinos** form. n.

In the British Museum are two ♀ specimens from Senegal with the upperside pale lemon-yellow. The name *chlorinos* is proposed to indicate this form.

Type from Senegal. A third specimen, with heavier black markings, is in the British Museum from Usukuma, Uganda. The form occurs in S. Africa with the fore-wing bearing a sharply defined black inner stripe; two from Delagoa Bay, two from Natal.

C. eris johnstoni (Butl.).

This represents a race which occurs from Bechuanaland southwards to the Cape.

♂. Upperside of fore-wing with the white spot in area 3 usually large, and the marginal edge between vein 2 and the tornus usually white.

♀. The nominotypical dry-season form. Upperside of fore-wing with apical area coffee-brown, and usually ending in a point at vein 3 or before it; a subapical blackish bar; a prominent dark post-discal spot in area 3, and one in area 2; a narrow blackish inner stripe from the base, not reaching as far as the spot in 2. Hind-wing without marginal spots. The wet-season form is more strongly marked, the apical area of fore-wing darker.

The British Museum contains a series from the Cape Province, and 12 ♂♂, 3 ♀♀ from Ghanzi, British Bechuanaland.

C. eris damara subsp. n.

This name is based on the dry-season form, which is distinctly different from others elsewhere.

♂. Upperside of fore-wing with the white spot in area 3 very large, and more or less united proximally with the ground-colour. Smaller than other males of the species.

♀. About the size of the ♂, the white spot in area 3 larger than in the ♂, and the tornal spot a little larger still. Hind-wing as in *johnstoni*. Ground-colour chalky-white.

A single ♂ of the wet-season form is in the British Museum, and does not differ from *eris eris*, but specimens of the nominotypical subspecies also occur among *johnstoni*.

Damaraland: 2 ♂♂, 1 ♀ (ex Coll. Trimen) (types); 1 ♂, 1 ♀ (ex Coll. Hewitson); 1 ♂, wet-season form (ex Coll. Trimen). Also 1 ♀ labelled S.W. Africa, viii.–xii. (*R. E. Turner*).

C. eris maimuna (Kirby).

The Angola race; 11 ♂♂, 9 ♀♀ in British Museum.

♂. Fore-wing with the white spot in area 3 strongly marked; discocellular spot absent in the British Museum examples. Hind-wing with the black costal area more or less reduced from about the origin of vein 7 to the base, in four specimens only indicated by some black scales; in a specimen of the dry form the costal black is reduced to a distal bar in area 7, and a small spot below it in area 6.

♀. Resembles the form *opalescens* (Butl.), the inner stripe on the fore-wing very narrow. Three specimens, also of the wet form, are pale lemon-yellow.

subfasciatus group.

This group comprises a single species which is especially characterised by the underside of the hind-wing; this is densely freckled or mottled with brown, and is crossed, from the base to near the outer margin, by a narrow longitudinal brown streak anteriorly edged with white.

♂. Upperside of fore-wing sulphur-yellow, a black costal bar and discocellular spot. Hind-wing paler, greenish-yellow.

♀. Upperside white or lemon-yellow; fore-wing with a subapical orange band, or the apical area orange; a dark discocellular spot.

C. subfasciatus subfasciatus (Swains.).

The original figure of this is a ♂ and not a ♀ as was supposed. Wet-season ♀ usually white, sometimes yellow; subapical band of fore-wing pale orange. Dry-season ♀ yellow or white; apical area of fore-wing brick-red with darker brownish outer border.

A ♂, ex Coll. C. Ward, bears a note saying: "It is a strong flier. Very difficult to take from the nature of the ground—rough, stony and scrubby hill-sides. Transvaal, iii.1870. *W.M.*"

C. subfasciatus ducissa (Dogn.).

In this race the ♀ of both seasonal forms resembles the ♀ of the nomino-typical dry form. The wet-season form is *sulfuratus* (Karsch).

fausta group.

This group comprises a single species. ♂. Fore-wing with a small oval patch of modified scales placed in a depression in area 1b, near the base, against vein 1a; vein 1a is incurved, giving space for the pocket between the vein and the fold. Upperside of both wings salmon-ochraceous. Fore-wing with a prominent discocellular spot; a black marginal border of varying width, bearing spots of ground-colour between the veins. *Underside* of fore-wing with brownish submarginal spots, the two posterior ones in areas 1b and 2 usually black and prominent; discocellular spot black, pupilled white. Hind-wing with discocellular spot as on fore-wing, also a post-discal curved brownish band, not always distinct.

♀. Similar to ♂, the colour deeper and more ochreous. Fore-wing without sex-patch.

C. fausta fausta (Oliv.).

This is in the British Museum from Syria, Turkey, Mesopotamia, Iraq, Trans-Jordan, Egypt, S. Arabia (Hadramaut, 1 ♂, Persia, Bushire, Afghanistan, Baluchistan and Tochi Valley (N.W. Frontier).

The summer form can be called *beckeri* (O. B.-H.), but is scarcely distinguishable from the winter form. A rare pale form in which the ♂ is almost white, is called *louisa* (Neub.).

C. fausta vi (Swinh.).

The discocellular spot on the fore-wing is vestigial. Arabia.

C. fausta faustina (Feld.).

In the British Museum from the Punjab, Sind, Cutch and Karwar.

This is a darker race. Fore-wing with costa more dusted with grey-black; the subapical salmon spots smaller, usually with some grey dusting on the outer edges.

♀. Brown or white; all transitions from those with ♂ colouring to the perfectly white ♀ which is dusted with black over the basal fourth of fore-wing. No marked seasonal forms, though the white ♀ has the appearance of a decided wet form.

C. fausta faustina form **oesypera** form. n.

Both forms of ♀ have the outer dark border of the hind-wing more developed than in the nominotypical race.

It is surprising that this white or smudgy-brown ♀ has not acquired a name. The name *oesypera* is proposed.

Type from Deesa, viii.1897 (ex Coll. Nurse). A series of 16 specimens in British Museum.

C. fausta fulvia (Wall.).

A darker race than *faustina*.

Fore-wing typically with three subapical spots, but frequently one or two others in areas 3 and 2. The ♀ is white, only in the dry-season form rarely tinged with brown.

The dry-season form is *rosaceus* (Butl.) (= *palliseri* Butl.). The ♀ allotype of *palliseri* is tinged lightly and partly with brown on the upperside.

In the British Museum from South India and North Ceylon. Between Bombay and Kanara this race overlaps the range of *faustina*.

eulimene group.

Represented by a single peculiar species confined to the Sudan and Arabia.

♂♀. Upperside white. Fore-wings with black apical area bearing prominent spots of ochreous-yellow, having a violet sheen; these spots are placed in areas 3–8, and are only separated by the veins; a prominent rounded black discocellular spot.

Underside of fore-wing with costa brick-red from base to about half. All the veins in the apical area, excepting vein 2, and all the veins of the hind-wing, striped brick-red; discocellular spot as above. Hind-wing with a small round black discocellular spot, two small black apical spots, and a curved submarginal row of dots, but usually no dot in area 5. Palpus with a very short anterior segment.

C. eulimene (Klug).

In the British Museum from the White Nile, Blue Nile, Suakin, Khartum, Hor Tamanib, Port Sudan, Arabia (Hejaz).

The genus *Calopieris* was erected by Aurivillius for this species. According to Klots (1931), who made a comparative study of the *Colotis* groups, *Calopieris* is entitled only to subgeneric rank.

Gideona Klots, 1931.

This genus was erected on *lucasi* (Grand.), which, according to Klots (1931) " not only differs considerably from the *Colotis* species in size, general appearance and wing-shape, but in the male genitalia."

G. lucasi (Grand.) (= *vohemara* Ward).

Madagascar. The nominotypical form belongs to the wet season. The "♂" described by Grandidier is obviously a ♀, and his ♀ is evidently *Catopsilia thauruma* Reak. A rare form of ♀ is entirely yellow, and another form is entirely white.

The type ♂ of *vohemara* Ward is in the British Museum (ex Coll. Oberthür).

G. lucasi form **suffusa** form. n.

The name *suffusa* is proposed for the entirely yellow ♀. Type from north Madagascar: Isokitraa, Diego Suarez, v.–x.1891 (*E. and B. Perrot*) (ex Coll. Oberthür) (wet-season form); a second specimen, with increased black markings on upperside, labelled "Madagascar."

G. lucasi form **deflava** form. n.

The name *deflava* is proposed for the entirely white ♀. Type labelled "MADAGASCAR" (ex Coll. Adams) (wet-season form).

G. lucasi form **lineata** form. n.

This name is proposed for the dry-season form. It is distinguished especially by the dark longitudinal line which is prominent on the underside of hind-wing from the base to outer margin. Types (♂♀) NORTH MADAGASCAR: Isokitraa, Diego Suarez, v.–x.1891 (*E. and B. Perrot*) (ex Coll. Oberthür).

SYSTEMATIC LIST.

Colotis Hübn., 1819.

calais group.

calais amatus (Fabricius), 1775.

Papilio cypraea Fabricius, 1787.
Papilio calais Stoll (*nec* Cramer), 1781.

dry-season form *carnifer* (Butler), 1876.
Syria to Persia and central India.

calais modestus (Butler), 1876.

Teracolus kennedii Swinhoe, 1884.

♀ form *albina* Evans, 1912, *J. Bomb. nat. Hist. Soc.* **21** : 559, 980.
South India and Ceylon.

calais calais (Cramer), 1775.

dry-season form *dynamene* (Klug), 1829.
Africa, south of the Sahara, except western forest area.

calais crowleyi (Sharpe), 1898.

♀ form *flavus* (Aurivillius), 1910.
Madagascar.

phisadia protractus (Butler), 1876.

Teracolus semiramis Grm. Grshm.

Baluchistan, N.W. Frontier Prov., Cutch, Punjab, Sind, Karwar.

phisadia ocellatus (Butler), 1885.

Abyssinia.

phisadia vagus (Riley), 1920.

Northern Kenya and northern Uganda.

phisadia rothschildi (Sharpe), 1898.

♀ form *albus* (Aurivillius), 1910.
Mombasa.

phisadia palaestinensis (Staudinger), 1897.

Palestine, Trans-Jordan.

phisadia phisadia (Godart), 1819.

Pontia arne Klug, 1829.
Teracolus philumene Mabille, 1880.

Arabia to Somaliland, Sudan, Mauritania; ?Senegal.

vestalis vestalis (Butler), 1876.

Teracolus puellaris Butler, 1876.
Teracolus dubius Swinhoe, 1884.

dry-season form *ochreipennis* (Butler), 1876.

Teracolus intermissus Butler, 1883.
Teracolus rorus Swinhoe, 1884.

dry-season ♀ form *peelus* (Swinhoe), 1884.
Bushire to Baluchistan, Punjab and western India.

vestalis castalis (Staudinger), 1885.

♂ form *nigricans* (Aurivillius), 1910.
♀ form *sabulosa* Talbot.
dry-season form *diminuta* Talbot.
Somaliland and southern Abyssinia to Kenya and Tanganyika Territory.

chrysonome gaudens (Butler), 1876.

Abyssinia.

chrysonome meinertzhageni (Riley), 1934.

Riley, *Ann. Mag. nat. Hist.* (10) **13** : 178.
Sahara (Ahaggar Mountains).

chrysonome chrysonome (Klug), 1829.

extreme dry-season form *arenicolens* (Butl.), 1884.
dry-season form *helvolus* (Butler), 1888.
Palestine and Trans-Jordan to Arabia, Somaliland, Sudan to northern Nigeria, Kenya and northern Tanganyika Territory.

aurigineus aurigineus (Butler), 1883.

dry-season form *venustus* (Butler), 1888.
South Sudan, Uganda, Kenya, Tanganyika Territory, Nyasaland, Northern Rhodesia, Ruanda.

aurigineus angolanus (Talbot), 1929.

Angola.

ansorgei ansorgei (Marshall), 1897.

Tanganyika Territory.

ansorgei cosmas (Hulstaert), 1924.

Kenya.

doubledayi (Hopffer), 1862.

Teracolus hewitsoni Kirby, 1871.

South-West Africa to Angola, Congo and Ste. Thomé.

ungemachi (Le Cerf), 1922.

Eritrea.

vesta vesta (Reiche), 1849.

Abyssinia, Somaliland.

vesta amelia (Lucas), 1852.

Teracolus armitagei Dudgeon, 1916.

dry-season form *insignis* (Rothschild), 1921.
Gold Coast to northern Nigeria, Haute Volta and Senegal.

vesta velleda (Lucas), 1852.

Sudan (except the south-east).

vesta princeps Talbot.

South-eastern Sudan, west Uganda.

vesta catachrysops (Butler), 1878.

♀ form *agapita* (Hulstaert), 1924.
Kenya (east of Mount Kenya to the coast).

vesta mutans (Butler), 1877.

dry-season form *arida* Talbot.
South Nyasaland to Rhodesia, Ngamiland and South-West Africa.

vesta argillaceus (Butler), 1877.

wet-season form *pluvius* Talbot.
Portuguese East Africa to Natal and Zululand.

vesta hanningtoni (Butler), 1883.

Teracolus bipartitus Rothschild, 1894.

♂ form *nigrescens* (Le Doux), 1929.
north-eastern Uganda and western Kenya.

vesta rhodesinus (Butler), 1893.

West Tanganyika Territory and north-western Rhodesia.

vesta virescens (Hulstaert), 1924.

Katanga.

protomedia (Klug), 1829.

Arabia to Abyssinia, Sudan and northern Nigeria, Uganda and Kenya to Tanganyika Territory.

celimene group.

celimene sudanicus (Aurivillius), 1905.

Northern Nigeria, Haute Volta, Senegal, and southern Sudan.

celimene angusi (Rothschild), 1921.

Western and central Sudan.

celimene praeclarus (Butler), 1885.

Somaliland.

celimene celimene (Lucas), 1852.

Eritrea, Abyssinia, Uganda, Kenya, Tanganyika Territory, Nyasaland.

celimene amina (Hewitson), 1862.

Rhodesia, northern Transvaal, Bechuanaland.

celimene pholoë (Wallengren), 1860.

Damaraland to Angola, ? western Transvaal.

halimede group.

zoë (Grandidier), 1867.

Madagascar.

venosus (Staudinger), 1885.

dry-season form *lactea* Talbot.
Kenya (coast to Kikuyu).

halimede halimede (Klug), 1829.

♀ form *acaste* (Klug), 1829.

Pieris polycaste Boisduval, 1836.

dry-season form *leo* (Butler), 1865.
Senegal to the White Nile and Red Sea coast.

halimede coelestis (Swinhoe), 1884.

Teracolus halimede coelestis form arid, *swinhoei* Rothschild, 1924.

dry-season form *coelestis* (Swinh.).
Arabia.

halimede restricta (Rothschild), 1924.

Teracolus halimede aurivillii Rothschild, 1921.

wet-season form *maxima* Talbot.
Abyssinia, Somaliland, Kenya.

halimede australis Talbot.

Eastern Tanganyika Territory.

pleione pleione (Klug), 1829.

Idmais eucheria Mabille, 1879.

♀ form *tethys* (Röber), 1906.
dry-season form *miriam* (Felder), 1865.

Teracolus chrysomelis Butler, 1874.

Arabia.

pleione heliocaustus (Butler), 1885.

dry ♀ form *eos* (Le Cerf), 1924.
Eritrea, Abyssinia, Somaliland.

ione group.

erone (Angus), 1849.

Anthopsyche speciosa Wallengren, 1857.

♀ form *albidus* (Aurivillius), 1910.
dry-season form *jobina* (Butler), 1869.
Natal to Transvaal and Northern Rhodesia.

ione (Godart), 1819.

♂ form *phlegyas* (Butler), 1865.

Teracolus bettoni Butler, 1898.
Teracolus difficilis Sharpe, 1900.

♂ form *imperator* (Butler), 1876.
♂ form *bacchus* (Butler), 1888.

Teracolus mrogoroana Vuillot, 1891.

♀ form *natalensis* (Staudinger), 1885.
♀ form *aurivillii* (Suffert), 1904.
♀ form *hydrophobus* (Suffert), 1904.
♀ form *anomalus* (Aurivillius), 1910.
♀ form *obsolescens* (Joicey & Talbot), 1927, *Encyclop. Ent.* (2) **1** : 11 (Great Craters, Tanganyika Territory). (Omitted from *Lep. Cat.*)
♀ form *rubidipuncta* (Joicey & Talbot), 1927.
♀ form *cardamines* Talbot.
♀ form *leucozona* Talbot.
♀ form *primularis* Talbot.
♀ form *xanthozona* Talbot.
dry-season ♂ form *jalone* (Butler), 1869.

Teracolus buxtoni Butler, 1876.

dry-season ♀ form *coliagenes* (Butler), 1867.
dry-season ♀ form *schuberti* (Suffert), 1904.
dry-season ♀ form *leda* Talbot.
dry-season ♀ form *xerophila* Talbot.
South Africa to Abyssinia, Sudan, Senegal, northern Nigeria, Gold Coast (northern Territory).

regina (Trimen), 1863.

wet-season form *anax* (Grose-Smith), 1889.

Teracolus eliza Sharpe, 1890.

♀ form *louisa* (Suffert), 1904.
♀ form *flavimacula* (Aurivillius), 1910.
Uganda and Kenya to Transvaal, South-West Africa and south-eastern Congo.

lorti (Sharpe), 1896.

Teracolus ludoviciae Sharpe, 1897.

Somaliland, Abyssinia.

hetaera aspasia (Ungemach), 1932.

♀ form *thiochroa* (Ungemach), 1932.
Abyssinia.

hetaera hetaera (Gerstaecker), 1871.

♀ form *foliaceus* (Butler), 1894.
♀ form *sulfureus* (Aurivillius), 1910.
♀ form *strix* Talbot.
dry-season form *puniceus* (Butler), 1888.
♀ form *albomaculatus* (Aurivillius), 1910.
♀ form *flavescens* (Aurivillius), 1910.
♀ form *mirabilis* Talbot.
Uganda and Kenya to northern Tanganyika Territory, eastern and north-eastern Congo.

eunoma eunoma (Hopffer), 1855.

Teracolus chromiferus Rothschild, 1894.

Natal to Portuguese East Africa, Mashonaland and Nyasaland.

eunoma flotowi (Suffert), 1904.

Eastern Tanganyika Territory.

elgonensis elgonensis (Sharpe), 1891.

Uganda: Toro (Mpanga Forest); Kenya: Elgon, Nandi, Mt. Kenya (north and west), Yala River, Nairobi; eastern Congo: Kabira Forest in Ruanda.

elgonensis kenia Talbot.

Kenya: east and south.

elgonensis glauningi (Schultze), 1909.

North-western Cameroons to western Uganda.

danae group.

hildebrandti (Staudinger), 1885.

Teracolus callidia Grose-Smith, 1886.

♀ form *clara* (Suffert), 1904.
♀ form *blanca* (Suffert), 1904.

Teracolus hildebrandti ♀-ab. *intermedia* Neustetter, 1916.

♀ form *bicolor* Talbot.
dry-season form *lanzi* (Bartel), 1905.
Uganda (rare), Tanganyika Territory, Nyasaland (rare).

danae annae (Wallengren), 1857.

Teracolus cinerascens Butler, 1873.

dry-season form *wallengreni* (Butler), 1876.
S. Africa, Rhodesia, Portuguese East Africa, Nyasaland, Katanga.

danae walkeri (Butler), 1884.

Angola.

danae pseudacaste (Butler), 1876.

Teracolus phoenius Butler, 1876.
Teracolus miles Butler, 1884.

♀ form *sulphurosus* (Thurau), 1903.
form *nigrilinea* Talbot.
dry-season form *fallax* (Wichgr.), 1913.
Tanganyika Territory, Kenya, Uganda, southern Abyssinia, eastern Congo, south-eastern Sudan.

danae eupompe (Klug), 1829.

Anthopsyche theopompe Felder, 1865.
Anthopsyche anteupompe Felder, 1865.

♀ form *pulchra* (Ungemach), 1932.
♀ form *depurpurata* (Ungemach), 1932.
dry-season form *dedecorus* (Felder), 1865.
ab. *pallidus* (Ungemach), 1932.
Northern Nigeria, Haute Volta, Senegal and Mauritania to the Sudan, western Abyssinia, Somaliland and Arabia.

danae danae (Fabricius), 1775.

Papilio eborea Cramer, 1781.
Teracolus eupompe purpurea Wichgraf, 1913.

dry-season form *sanguinalis* (Butler), 1876.

Teracolus taplini Swinhoe, 1884.

Ceylon and Peninsular India.

danae dulcis (Butler), 1876.

Teracolus eboreides Butler, 1876.

♀ form *dirus* (Butler), 1876.
♂ form *immaculatus* (Swinhoe), 1884.
dry-season form *subroseus* (Swinhoe), 1884.

Callosune alberta Swinhoe, 1890.

North-eastern Arabia (Fao), southern Baluchistan, Sind, Kutch, central India.

guenei (Mabille), 1877.

dry-season form *siga* (Mabille).
Madagascar.

eucharis group.

eucharis eucharis (Fabricius), 1775.

Papilio meta Herbst, 1792.
Pieris titea Godart, 1819.
Euchloe coeneos Hübner, 1819.
Teracolus pseudevanthe Butler, 1876.

dry-season form *aurora* (Cramer), 1780.
form *pallens* (Moore), 1877.
Ceylon and Peninsular India.

eucharis evarne (Klug), 1829.

Teracolus xanthevarne Butler, 1876.

dry-season form *citreus* (Butler), 1876.
Northern Nigeria, Haute Volta, Senegal, Sudan to Red Sea, Abyssinia, Uganda, Kenya, Tanganyika Territory.

eucharis philippsi (Butler), 1886.

dry-season form *sharpei* (Aurivillius), 1910.
Somaliland.

eucharis incretus (Butler), 1881.

♂ ab. *vulneratus* (Staudinger), 1885.
♀ form *panganiensis* (Thurau), 1903.
Uganda, Kenya, Tanganyika Territory, Nyasaland.

eucharis dissociatus (Butler), 1897.

Nyasaland to north-eastern Rhodesia, Mashonaland and Matabeleland.

eucharis auxo (Lucas), 1852.

Teracolus syrtinus Butler, 1876.

dry-season form *topha* (Wallengren), 1860.

Anthocharis keiskamma Trimen, 1862.

Portuguese East Africa to Natal and Zululand.

antevippe group.

antevippe antevippe (Boisduval), 1836.

♀ form *carteri* (Butler), 1882.
Gold Coast, northern Nigeria, Haute Volta, Guinea, Senegal, Senegambia, Upper Egypt.

antevippe zera (Lucas), 1852.

Anthocharis isaura Lucas, 1852.
Teracolus ithonus Butler, 1876.
Teracolus hippocrene Butler, 1876.
Teracolus ignifer Butler, 1876.
Teracolus hyperides Butler, 1876.

extr. dry-season form *harmonides* (Butler), 1876.

Teracolus simplex Butler, 1876.
Callosune damarensis Aurivillius, 1879.
Teracolus lüderitzi Suffert, 1904.

wet-season form *helle* (Butler), 1876.

Teracolus subvenosus Butler, 1883.
Teracolus laura Sharpe, 1890.

♂ form *clarescens* (Joicey & Talbot), 1927.
Sudan and Abyssinia to Uganda, Kenya, south-eastern and eastern Congo, northern Tanganyika Territory.

antevippe gavisa (Wallengren), 1857 (♂).

Papilio achine Stoll, 1781 (= homonym).
Anthocharis exole Reiche, 1849 (♀).
Teracolus trimeni Butler, 1876.
Callosune ramaquebana Westwood, 1882 (♀).
Teracolus fumidus Swinhoe, 1884.

form *hero* (Butler).
form *helle* (Butler), 1876.
dry-season form *zera* (Lucas), 1852.

Callosune haevernicki Staudinger, 1885.

extr. dry-season form *harmonides* (Butler), 1876.
Tanganyika Territory (including Zanzibar, to south of Lat. 6°), Nyasaland, Angola, Rhodesia, Cape, Natal, and Portuguese East Africa.

evenina evenina (Wallengren), 1857.

Anthopsyche deidamia Wallengren, 1860.
Teracolus corda Möschler, 1883.

dry-season form *deidamioides* (Aurivillius), 1879.

Callosune inornata Westwood, 1882.

South and South-West Africa.

evenina sipylus (Swinhoe), 1884.

♀ form *granti* Talbot.
♀ form *johnstonei* Talbot.
♀ form *canus* Talbot.
♀ form *flavofasciata* (Neustetter), 1916.
Rhodesia to Katanga, Nyasaland and Tanganyika Territory.

evenina xantholeuca (Sharpe), 1904.

Teracolus confusus Le Doux, 1929.

♀ form *ledouxi* Talbot.
Tanganyika Territory (north-western and central) to Victoria Nyanza and Lake George.

evenina casta (Gerstaecker), 1871.

Teracolus evenina liagore form *castina* Le Cerf, 1924 (♂) (Eritrea).

form *castina* Le Cerf, 1924 (♂) (Eritrea).
Kenya, northern Uganda to Somaliland and Eritrea.

evippe group.

evippe evippe (Linnaeus), 1764.

Papilio rhexia Fabricius, 1775 (♂).
Teracolus evippe form *pulveratula* Strand, 1913.
Teracolus evippe form *mokundangensis* Strand, 1913.

♀ form *leucoma* Talbot.
♀ form *ocale* (Boisduval), 1836.
dry-season form *arethusa* (Drury), 1773.
♀ form *hanna* (Herbst), 1792.

Pieris amytis Godart, 1819.
Anthocharis cebrene Boisduval, 1836.

West Africa from Congo to Senegal, extending to Abyssinia.

evippe epigone (Felder), 1865.

Teracolus microcale Butler, 1876.

S. Abyssinia, southern Sudan.

evippe complexivus (Butler), 1885.

dry-season form *pyrrhopterus* (Butler), 1894.
Uganda and western Kenya, extending to Somaliland.

evippe omphale (Godart), 1819.

♂. *Anthocharis exole* Reiche, 1849.
Anthocharis eurygone Lucas, 1852.
♀. *Anthopsyche acte* Felder, 1865.
Anthopsyche roxane Felder, 1865.

dry-season form *theogone* (Boisduval), 1836.

♀. *Anthopsyche procne* Wallengren, 1857.

♂ form *omphaloides* (Butler), 1876.
form *hybridus* (Butler), 1876.
♀ form *ochreata* Talbot.
Eastern and southern Kenya to Tanganyika Territory, Nyasaland, Portuguese East Africa, S. Africa.

evippe mediata Talbot.

dry-season form *ochroleucus* Talbot.
South-eastern Congo, Rhodesia to Nyasaland (part).

evippe loandicus (Butler), 1871.

Teracolus angolensis Butler, 1876.
Teracolus pseudocale Butler, 1876.

wet-season form *suffusus* (Butler), 1876.
Angola, western Congo.

evippe evanthe (Boisduval), 1836.

dry-season form *ena* (Mabille), 1879.
♂ form *lecithosoides* (Oberthür), 1920.
Madagascar.

etrida etrida (Boisduval), 1836.

Teracolus pernotatus Butler, 1876.
Teracolus farrinus Butler, 1876.
Teracolus purus Butler, 1876.

dry-season form *casimirus* (Butler), 1876.

Teracolus bimbura Butler, 1876.

Baluchistan to Kutch, Central Provinces and Peninsular India.

etrida limbata (Butler), 1876.

Ceylon.

daira daira (Klug), 1829.

Teracolus yerburii Swinhoe, 1884.

♀ form *swinhoei* (Butler), 1884.
Arabia.

daira stygia (Felder), 1865.

Pontia daira Klug, 1829, *in* Ehrenberg, *Symb. Phys.*, t. VIII, figs. 3, 4 (♀).
Anthopsyche dalila Felder, 1865.

form *odysseus* (Swinhoe), 1884.
♀ form *flavus* (Aurivillius), 1910.
Somaliland, Abyssinia, Sudan and Nigeria.

daira thruppi (Butler), 1885.

♀ form *flavidus* (Aurivillius), 1910.
♀ form *arusa* Talbot.
♀ form *canescens* Talbot.
Somaliland to Uganda and western Kenya.

daira jacksoni (E. M. Sharpe), 1890.

♀ form *flavidus* (Auriv.).
♀ form *arusa* Talbot.
Southern and eastern Kenya to Kilimanjaro.

pallene pallene (Hopffer), 1855.

♂ form *cinctus* (Butler), 1883.
wet-season form *infumatus* (Butler), 1896.

Teracolus weissmanni Suffert, 1904.

form *seineri* (Strand), 1909.
dry-season form *meinickei* (Le Doux), 1929.
form *simplicioides* (Le Doux), 1929.
♀ form *pallida* (Le Doux), 1929.
south-eastern Africa to Nyasaland, Tanganyika Territory and Uganda.

pallene halyattes (Butler), 1876.

Natal to Delagoa Bay.

pallene lais (Butler), 1876.

dry-season form *achinoides* (Le Doux), 1929.
Transvaal to the Cape and South-West Africa.

ephyia (Klug), 1829.

Sudan.

rogersi (Dixey), 1915.

Kenya to south-eastern Sudan.

agoye group.

agoye zephyrus (Marshall), 1897.

Somaliland.

agoye agoye (Wallengren), 1857.

Teracolus esophorus Trimen, 1863.

South Africa (north of Lat. 26°).

agoye bowkeri (Trimen), 1883.

South Africa (south of Lat. 26°).

liagore group.

liagore liagore (Klug), 1829.

wet-season form *liagoroides* (Roths.), 1921.
Sudan, Abyssinia to northern Nigeria, Arabia and southern Baluchistan.

evanthides group.

evanthides (Holland), 1896.

Seychelles and Comoro Islands : Aldabra, Assumption, Mayotte.

antigone group.

antigone evagore (Klug), 1829.

Teracolus saxeus Swinhoe, 1884.

Arabia.

antigone biskrensis (Blachier), 1908.

Algeria.

antigone nouna (Lucas), 1849.

form *turatii* (Stauder.), 1913.
dry-season form *lefevrei* (Oberthür), 1921.
Morocco to Oran.

antigone antigone (Boisduval), 1836.

wet-season form *antigone* (Boisd.), 1836.

Teracolus interruptus Butler, 1871.
Teracolus lucullus Butler, 1875.

wet-season form *phlegetonia* (Boisduval), 1836.

Teracolus friga Butler, 1876.
Teracolus glycera Butler, 1876.
Teracolus coniger Butler, 1882.
Teracolus minans Butler, 1882.
Teracolus xanthus Swinhoe, 1884.

Teracolus comptus Butler, 1888.
Teracolus bifasciatus Sharpe, 1890.

♂ form *heuglini* (Felder), 1859.

Teracolus gelasinus Butler, 1876.

♀ form *eione* (Boisduval), 1836.
♀ form *jamesi* (Butler), 1885.
form *emini* (Butler), 1891.
♀ form *contrasta* Talbot.
♀ form *decolor* Talbot.
♀ form *desertorum* Talbot.
♀ form *luvua* Talbot.
dry-season form *delphine* (Boisduval), 1836.

Anthopsyche demagore Felder, 1865.
Teracolus subfumosus Butler, 1876.
Teracolus lycoris Butler, 1876.
Teracolus flaminia Butler, 1876.
Teracolus lyaeus Butler, 1876.
Teracolus metagone Holland, 1896.

dry-season form *galathinus* (Butler), 1876.
♀ form *pseudetrida* (Westwood), 1882.
♀ form *bianca* Talbot.
♀ form *wa* Talbot.
♀ form *xanthotes* Talbot.
Africa, south of the Sahara.

antigone niveus (Butler), 1881.

dry-season form *candidus* (Butler), 1881.
Socotra.

mananhari group.

mananhari (Ward), 1870.

form *nothus* (Mabille), 1887.
dry-season form *flavida* (Mabille), 1877.
Madagascar.

eris group.

eris eris (Klug), 1829.

♀ form *abyssinicus* (Butler), 1876.
♀ form *opalescens* (Butler), 1886.
form *teitensis* (Sharpe), 1898, ♂.
form *erioides* (Strand), 1911.
dry-season form *fatma* (Felder), 1865, ♀.
form *punctigera* (Lanz), 1896, ♂.
♀ form *chlorinos* Talbot.
Northern Nigeria to Senegal, Mauritania, Sudan, Abyssinia, Somaliland, Aden, Uganda to Nyasaland, southern Congo, Rhodesia, south-eastern Africa and Natal.

eris johnstoni (Butler), 1886.

Bechuanaland to the Cape.

eris damara Talbot.

Damaraland and South-West Africa.

eris maimuna (Kirby), 1879.

Angola.

subfasciatus group.

Teracolus Swainson, 1832.
Ptychopteryx Wallengren, 1857.
Thespia Wallengren, 1858.

subfasciatus subfasciatus (Swainson), 1833.

Ptychopteryx bohemani Wallengren, 1857.

dry-season form *ganymedes* (Trautmann), 1927, ♀.
South and South-West Africa, Portuguese East Africa.

subfasciatus ducissa (Dognin), 1891.

wet-season form *sulfuratus* (Karsch), 1898, ♂.
Rhodesia, Nyasaland, Katanga, Tanganyika Territory.

fausta group.

Madais Swinhoe, 1910.

fausta fausta (Olivier), 1801.

dry-season form *beckeri* (O. Bang-Haas), 1927.
form *louisa* (Neuberger), 1907.
Syria, Turkey, Mesopotamia, Palestine, Iraq, Trans-Jordan, Egypt, Persia, southern Arabia (Hadramaut), Bushire, Afghanistan, Baluchistan, North-West Frontier Prov. (Tochi Valley).

fausta vi (Swinhoe), 1884.

Teracolus fausta ab. *immaculata* Röber, 1907.

Aden.

fausta faustina (Felder), 1865.

Teracolus oriens Butler, 1876.

♀ form *oesypera* Talbot.
Punjab to Sind and Karwar.

fausta fulvia (Wallace), 1867.

Idmais tripuncta Butler, 1868.
Teracolus solaris Butler, 1876.
Idmais surya Moore, 1884.

dry-season form *rosaceus* (Butler), 1876.

Teracolus palliseri Butler, 1888.

Peninsular India, northern Ceylon.

eulimene group.

Calopieris Aurivillius, 1898.

eulimene (Klug), 1829.

Sudan, Red Sea coast, Arabia.

Gideona Klots (1931).

Teracolus Aurivillius (part), 1898, 1910.

lucasi (Grandidier), 1867.

Eronia vohemara Ward, 1870.

♀ form *suffusa* Talbot.
♀ form *deflava* Talbot.
dry-season form *lineata* Talbot.
Madagascar.

List of New Names Proposed in this Paper.

C. vestalis castalis ♀ form *sabulosa* (Taveta).
dry-season form *diminuta* (Somaliland).
C. vesta princeps (Uganda; S.E. Sudan).
C. vesta mutans, dry-season form *arida* (N.E. Rhodesia).
C. vesta argillaceus wet-season form *pluvius* (Zululand; Natal).
C. venosus dry-season form *lactea* (Kenya).
C. halimede wet-season form *maxima* (Kenya).
C. halimede australis (E. Tanganyika Territory).
C. ione ♀ form *cardamines* (Gold Coast).
♀ form *leucozona* (Kenya).
♀ form *primularis* (N. Nigeria).
♀ form *xanthozona* (Kenya).
♀ form (dry season) *leda* (Abyssinia).
♀ form (dry season) *xerophila* (Rhodesia).
C. hetaera ♀ form *strix* (Kenya).
♀ form (dry season) *mirabilis* (Kenya).
C. elgonensis kenia (Kenya).
C. hildebrandti ♀ form *bicolor* (Tanganyika Territory).
C. danae pseudacaste form *nigrilinea* (Uganda).
C. evenina sipylus ♀ form *canus* (Tanganyika Territory).
♀ form *granti* (Tanganyika Territory).
♀ form *johnstonei* (Tanganyika Territory).
C. evenina xantholeuca ♀ form *ledouxi* (Kenya).
C. evippe evippe ♀ form *leucoma* (Sierra Leone).
C. evippe omphale ♀ form *ochreata* (Tanganyika Territory).
C. evippe mediata (S.E. Congo).
dry-season form *ochroleucus* (S.E. Congo).
C. daira thruppi ♀ form *arusa* (Arusa Galla).
♀ form *canescens* (Somaliland).
C. antigone antigone ♀ form *contrasta* (Sudan).
♀ form *decolor* (Uganda).
♀ form *desertorum* (Sudan).
♀ form *luvua* (S.E. Congo).
♀ form (dry season) *bianca* (Ruindi River).
♀ form (dry season) *wa* (N.E. Rhodesia).
♀ form (dry season) *xanthotes* (Natal).
C. eris eris ♀ form (dry-season) *chlorinos* (Senegal).
C. eris damara (S.W. Africa).
C. fausta faustina ♀ form *oesypera* (Deesa).
Gideona lucasi ♀ form *suffusa* (N. Madagascar).
♀ form *deflava* (Madagascar).
dry-season form *lineata* (N. Madagascar).

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